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BUSINESS KOREA

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Manufacturing in Crisis

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Tel: 770-880-6722 Email: toclair@businesskorea.co.kr**Absurd Dereliction of Duties against Epidemic**

The number of MERS patients in Korea has increased to 162 on June 17, half of them infected directly or indirectly via Samsung Medical Center (SMC). One of its patient

transporters spread the virus to outpatients and visitors to the hospital. The hospital staff made the decision on June 15 to shut down parts of the hospital, including the entire emergency room.

The transporter is said to have done his job for nine days after his infection, and the number of outpatients who visited the hospital during the period is estimated at more than 70,000. This is unbelievable, given that the SMC is one of the finest medical facilities in the country led by a former head of the Korean Society of Infectious Diseases and the current chairman of the board of the Asia Pacific Foundation for Infectious Diseases.

During the early stages of the infection, the Korean Hospital Association tried to disclose the list of hospitals infected with the virus, including the SMC, in order to set people at ease. However, the Ministry of Health & Welfare blocked the disclosure for reasons unknown and left, in particular, the SMC unchecked for a while, as if the hospital was a kind of sacred ground. Although it has yet to be found whether there was any collusion between the hospital and the health authorities, it cannot be denied that their nonsensical response during the early stage has compounded the matter.

Things might have been different if the authorities had allowed the disclosure of the list and taken appropriate measures on May 20, when the first patient appeared. However, the Korean health authorities tried to hush things up, and then resorted to ill-founded optimism to add fuel to the fire.

It is the people that suffer damage under these circumstances. Their everyday lives are increasingly filled with fear about the disease spreading nationwide. Even President Park Geun-hye had to postpone her visit to the United States, and the domestic economy is groaning.

The SMC, which detected the first patient, made a serious mistake and lost its opportunity to prevent the spread of the disease. The catastrophe might not have occurred if Samsung had adhered more to its responsibility as a leading member of society.

"It is not Samsung but Korea whose defense line was broken," the head of the infectious diseases division of the SMC said at a recent National Assembly hearing to cause severe criticism. The remark is only half-right, though. As mentioned above, the government did fail to take appropriate action in the early stages. Nevertheless, this is no excuse for the SMC.

The health authorities and the SMC should be held accountable for having failed to block the spread of the virus and fear from day one. A thorough investigation will have to follow so those responsible are censured for what they did. Civil compensation for damages for the victims should not be forgotten, either.

Park Jung-hwan,
Publisher & Editor-in-Chief

Respiratory Distress

Korean Economy Hit by MERS Sinking into Swamp

by Jung Suk-ye

The Middle East respiratory syndrome coronavirus (MERS-CoV) has reached a fatality rate of 16.1 percent as of June 25 in Korea. The number of the Korean patients who died of MERS-CoV has increased by two to 29 as of the date. The global fatality rate announced by the European Center for Disease Prevention and Control was 38.4 percent.

The fatality rate in Korea has continued to rise since the middle of this month, as the number of those who lost their lives has continued to increase, while the pace of the increase in the number of those diagnosed with the disease has been slowing down.

Twenty-seven out of the 29 patients had underlying diseases or were senior citizens. The other two had no underlying diseases at all. Ten of the deceased were in their sixties, while nine were in their seventies and five were in their eighties. Four and one were aged between 50 and 59 and between 40 and 49, respectively.

The fatality rate may further increase because not a few of the remaining patients are in critical condition. According to the health authorities, 15 out of the 77 patients currently under medical treatment are showing instability, which means they are relying on extra-corporeal membrane oxygenation or respirators.

Fear of MERS Spreading like Wildfire

When the MERS broke around one month ago, the sales of personal hygiene items on online shopping sites were skyrocketing with the fear of MERS spreading nationwide, while offline stores' concerns were growing about a rapid decline in



Koreans are wearing a lot more masks in public due to fears of MERS.

the number of visiting customers.

In the online shopping mall Gmarket, the sales of such products soared by up to 1,400 percent compared to the previous week between May 27 and June 2. Masks and hand cleaners recorded 1,454 percent and 673 percent increases, respectively. On Auction, another online mall, the percentages amounted to 935 percent and 638 percent during the same period. In the social commerce website WeMakePrice, the sales of those products increased by more than 400 percent year on year between May 20 and June 1, and foods known to enhance immunity are sought after as well. For instance, tomato and red ginseng sales volumes went up by 85 percent and 231 percent each.

Meanwhile, major offline stores suffered from a decrease in sales, as more and more people shunned them. E-Mart's sales between May 29 and June 2, for example, declined by 1.2 percent year-on-year, and Lotte Mart's dropped by 4.2 percent during the period.

People have been avoiding hospitals, too. "Medical institutions are now regarded as the source of the infection in the wake of the outbreak of the tertiary infection," said a local hospital employee.

Under the circumstances, more and more people have been avoiding traveling or going to crowded places.

Hallyu Tourism Hit by MERS

In particular, the spread of MERS has brought the Hallyu (Korean Wave) to a standstill. Cultural events have been called off, and the medical tourism has virtually stopped.

An increasing number of cultural exchange events have been being canceled. Foreign governments seem to be uncomfortable with Koreans who enter their country, and the Korean tourism industry has difficulty in attracting tourists from abroad.

On top of that, events related to Korean movies were all canceled during the

18th Shanghai International Film Festival between June 13 and 21. The upcoming "K-Culture Festival in Chengdu 2015" to be held on June 20 to 22 has also been delayed.

The number of foreign tourists resulting from the Korean wave has greatly decreased as well. According to the Korea Tourism Organization, 120,000 foreign tourists, including those from China, canceled their reservations as of June 16, after MERS started last month. In addition, Korea saw a drastic reduction in advance booking to visit the country during the peak summer holiday season.

In particular, medical tourism took a direct hit from the MERS situation. Due to the nation's failure to properly respond to the contagious disease, the Korean medical system has been heavily criticized. As a result, the number of medical tourists to get cosmetic or other kinds of surgery drastically decreased.

So far, the Hallyu has brought about significant economic benefits, going beyond the expansion of the Korean culture. Any serious blow to Hallyu is bound to hurt the economy. According to the Korea Foundation for International Culture Exchange, the total export of cultural content, consumer goods, and tourism generated by the Korean wave amounted to US\$6.164 billion in 2014, a year-on-year increase of 8.4 percent. In particular, Hallyu created significant added value of 4.69 trillion won (US\$4.23 billion) last year, up 4.5 percent from 2013.

Korean Economy Stricken by MERS

The MERS is affecting the national economy and Korean companies' performance alongside the weak yen. Those in the transportation, consumer goods, hotel, leisure, cosmetics, and clothing industries in particular are taking a particularly serious hit.

According to financial information provider WISEfn, the combined operating profit estimate for the second quarter covering the 167 KOSPI-listed companies that had profits estimated by at least three organizations each is 32.8688 trillion won

(US\$29.7029 billion), 2.27 percent lower than the same estimate provided a month earlier.

The estimate for the transportation industry decreased by 11.89 percent month-on-month as the number of inbound tourists plummeted. It was followed by the hotel and leisure industry (7.61 percent down), consumer goods (4.26 percent down), and cosmetics and clothing (1.66 percent down).

According to the Korea Economic Research Institute, a three-month continuation of the contagious disease is likely to incur a loss of 20.0922 trillion won (US\$18.1569 billion) in GDP, which is equivalent to 1.31 percent of the annual average GDP. It added that the situation would drag down investment by 3.46 percent, consumption by 1.23 percent, and exports by 1.98 percent.

All-out Efforts to End Depression

As the fear of MERS spreads like wildfire to raise a serious concern over the national economy, the Korea Chamber of Commerce and Industry (KCCI) held an emergency meeting on June 22, calling on its 150,000 member companies to make every effort to end the depression from MERS.

At the executive members meeting, Chairman Park Yong-maan of the KCCI said, "The nation should put an end to the depression from the MERS as early as possible to revive the economy."

Park stressed the need of voluntary and active participations in the effort by businesses as well as the government to end the depression early; businesses should implement plans for investment and employment on schedule, while the government should iron out all possible measures to stimulate the national economy.

He said that such an effort will help companies take advantage of free trade agreements that the nation has signed with other countries and create a more cooperative labor-management relationship.

In particular, the KCCI chairman said that companies should encourage employ-



Park Yong-maan (right), chairman of the Korea Chamber of Commerce and Industry, speaks at a meeting with KCCI executive members at the Lotte Hotel in downtown Seoul on June 22.


ees to vacation domestically during the coming summer vacation. Park also pledged to boost cooperation with 130 foreign chambers of commerce operating in Korea to dispel concerns among foreign communities over the MERS outbreak.

The KCCI chairman then urged the government to introduce a set of stimulus measures to reinvigorate the shrinking economy.

"The government needs to expand financial aid to businesses hit by the MERS outbreak," Park said, stressing, "At the same time, the government should introduce a large-scale supplementary budget to revitalize the economy, while continuing to ease regulations."

In the meantime, the government on June 25 decided to earmark 10 trillion won (US\$8.9 billion) for a supplementary budget and spend an additional 5 trillion won (US\$4.5 billion) from state funds in the second half of the year to boost an economy hit by the MERS outbreak.

The Ministry of Planning and Finance government also revised its 2015 GDP growth outlook down to 3.1 percent from its earlier forecast of 3.8 percent, with second quarter growth likely coming in at less than 1 percent. "We expected the economy to grow 1 percent in the second quarter, but this will be difficult now due to MERS," said Deputy Prime Minister and Finance Minister Choi Kyung-hwan.

The outbreak is estimated to have reduced economic growth by between 0.2 and 0.3 percentage points. The government expects a supplementary budget and an improving global economy to help the economy regain momentum in the latter half of the year. 

Freer Trade

Korea-China FTA Officially Signed




Trade Minister Yoon Sang-jick (right) and his Chinese counterpart Gao Hucheng pose together after officially signing the free trade agreement (FTA) in Seoul on June 1.

The Korea-China FTA was officially signed on June 1, three years after the start of the negotiations. According to the agreement, China's import tariffs on 7,428 trade items (90.7 percent) are to be eliminated within 20 years. The import amount figures amount to US\$141.7 billion and 85 percent.

The Korean government is predicting that the Korea-China FTA will add 0.96 percent to Korea's real GDP for 10 years to come, while improving consumer benefits by US\$14.6 billion and contributing to the creation of 53,805 jobs. These estimates are based on a quantitative analysis of the effect of the free trade deal, which means more positive effects can be anticipated when qualitative factors such as the opening of the service market, promotion of investment, and removal of trade barriers are taken into account. The export of consumer goods like cosmetics, home appliances, and apparel is expected to be boosted as well by the popularity of the Korean Wave.

Still, it is also said that cheaper manufactured goods from China will increas-

ingly take the place of their Korean counterparts. These days, domestic consumption remains tepid in Korea, in spite of the government's interest rate cut and economic stimulus package, and its industrial production is on the decline, implying that the effect of the FTA could be limited at best.

"Today's stagnation in exports from Korea to China is due to structural factors such as Korea's high dependence on processing trade and the rapid development of the tertiary industry in China," said Jeong In-kyo, economics professor at Inha University, adding, "The FTA's positive effects are predicted to be rather limited, and small manufacturers and exporters in Korea are likely to face a daunting challenge."  by Cho Jin-young

Trans Pacific

Korea, Central American Nations Start FTA Talks



Trade minister Yoon Sang-jick (center) joins hands with his counterparts from six Central American countries at a meeting in Houston, Texas, on June 18 (local time).


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by Cho Jin-young

Silk Road Co-op

Korea to Cooperate in Uzbek Infrastructure Projects Worth 61 Trillion Won



President Park Geun-hye and her Uzbek counterpart, Islam Karimov, shake hands before holding a summit at Cheong Wa Dae on May 28.

Korean companies are expected to have more chances to take part in large-scale infrastructure development projects in Uzbekistan in which US\$55 billion (61 trillion won) will be invested over the next five years.

President Park Geun-hye and her Uzbek counterpart, Islam Karimov, held a summit at Cheong Wa Dae on May 28 and agreed to push for large-scale cooperative projects in Uzbekistan.


The two heads also agreed to continuously develop mutual cooperation models to combine Uzbekistan's natural resources and Korea's technology and capital, and help Korean companies to win orders of new projects in the areas of gas, petrochemicals, power generation, and alternative energy. Uzbekistan plans to carry out nearly 900 projects to modernize industrial facilities and build infrastructure worth US\$55 billion (61 trillion won), including the gas petrochemical sectors and the construction of roads and new airports, in the next five years.

With the two heads of state in attendance, GS Engineering & Construction (E&C) signed a memorandum of understanding (MOU) with Uzbekistan's national oil and gas company Uzbekneftegaz (UNG) for a US\$4.5 billion (5 trillion won) Methanol to Olefin (MTO) project. The project is to construct a plant to produce olefins, a material often used in construction and daily supplies, from the methanol in natural gas.

President Park also asked the Uzbek president to help Korean

companies participate in large-scale infrastructure projects, which includes the construction of thermal power plants in Turakurgan worth US\$1 billion (1.11 trillion won) and Takhiatash worth US\$700 million (773.85 billion won), and a solar power plant in Samarkand worth US\$300 million (331.65 billion won).

Also, Cheong Wa Dae said that the two heads also agreed to ensure smooth operation of ongoing projects, which includes the construction of the Surgil gas field worth US\$3.9 billion (4.31 trillion won) and gas liquefaction project worth US\$3.1 billion (3.43 trillion won), the development of Kandym gas field worth US\$2.7 billion (2.98 trillion won), the modernization project of Talimarjan thermal power plants worth US\$820 million (906.51 billion won), the construction of highways worth US\$170 million (187.94 billion won), and the modernization project of electric power meters worth US\$100 million (110.55 billion won).

During the meeting, both heads of state highly praised that the international distribution center of the Navoi International Airport, which was newly built through partnerships with Korea and Uzbekistan, is successfully being operated, and has become a complex logistics hub airport to annually transport 100,000 tons of freight. Also, they decided to consider the measures for Korean companies to participate in airport modernization projects, which will be initiated by the Uzbek government in the future. 

by Jung Suk-ye

African Participation

Korean Companies Invited for Social Infrastructure Projects in Senegal



President Park Geun-hye and her Senegalese counterpart, President Macky Sall, shake hands at a summit meeting held in the Presidential Office in Seoul on June 4.


President Park Geun-hye had a summit meeting with Senegalese President Macky Sall in Seoul on June 4. The latter said that he was looking forward to Korean companies' active participation in Plan Senegal Emergent (PSE), which is a set of 26 social infrastructure projects worth

US\$10.1 billion in total.

The projects include the construction of railway networks between Dakar and Mali estimated to cost US\$1.5 billion, expressway construction between the mid-west and northwest parts (US\$1.2 billion), tramway construction in Dakar (US\$730 million), public housing construction (US\$440 million), and business park construction (US\$540 million). Also, Senegal is planning on free economic zones, and the Korean government promised at this time to share its expertise regarding the development of free economic zones.

The two Presidents signed a memorandum of understanding as well for closer cooperation in the marine industry. At present, Senegal is in possession of the

largest port facilities in West Africa, and Korean vessels have produced 30,000 tons of fishery products a year offshore the country.

Also, similar MOUs were concluded for partnership in the fields of trade and investment. According to the agreements, a series of cooperation projects are to be launched in the form of vocational training for startups in certain sectors such as textiles and clothing, technology transfer, collaboration in the alternative energy industry, mutual trade delegation visits, and the like. In addition, the Senegalese government asked Korean companies to join its digital city project to cost US\$70 million. 

by Jung Suk-ye

Sharing Saemaul

North Gyeongsang Province Governor Meets Senegalese President Macky Sall



North Gyeongsang Province Governor Kim Kwan-yong poses with Senegalese President Macky Sall at the meeting in Lotte Hotel Seoul on June 4.

On June 4, North Gyeongsang Province Governor Kim Kwan-yong met Senegalese President Macky Sall at Lotte Hotel Seoul to exchange opinions and seek ways for cooperation in the community development program known as the "Saemaul Movement" in North Gyeong-

sang Province.


President Sall is currently visiting Korea at the invitation of President Park Geun-hye from June 3 to 7. Because of his special interest in the Saemaul movement, Sall insisted on a meeting with Governor Kim.

During the meeting, President Sall said that there are favorable responses and interest in on-going projects run by the provincial government. As part of the program, It has dispatched volunteers to two villages in the Saint-Louis region of the western African nation since 2013 to help modernize its rural areas. He also said that the government will actively seek further cooperation.

In response, Governor Kim said that the provincial government will invite Sen-

egalese public officials to the country to share their experiences of the Saemaul movement. He also said that it will make efforts to help developing rural areas of Senegal.

Senegal is a country with a population of 120 million that set up diplomatic relations with Korea in 1962. The country is also continuously growing into an exemplary democracy in Africa.

President Sall is paying attention to Korea, which has grown from the world's poorest country to one of economic power of the OECD in half a century. In particular, he has a keen interest in the Saemaul movement, also called the New Community Movement, which focuses on rural development to expedite the impoverished country's industrialization.  by Jung Suk-ye

3rd World Aid

Korean Government Launches IT Consulting Projects in 10 Developing Countries

According to the Ministry of Strategy & Finance and Korea EximBank, a total of seven overseas system consulting projects are scheduled in 10 countries, including Indonesia and Armenia, as parts of the Korean government's Knowledge Sharing Program (KSP) for this year.


The first orders for the projects, which cover taxation, payments, settlements, and the like were placed on May 29, and the second are to be placed on June 5. Credit and technology guarantee system projects are scheduled in Thailand and Indonesia, and gas safety system and patent administration system projects in Mongolia and Mozambique.

The KSP is an international aid program financed by the ministry and carried out by the bank. Korean companies can participate in the tenders. The Korean



government's Official Development Assistance (ODA) budget for this year includes 840 billion won (US\$755.5 million) in grant aid, and 20 billion won (US\$18 million) of it is earmarked for the KSP.

KSP projects also include those launched through joint consultations with international organizations such as the World Bank, the Asian Development Bank and the African Development Bank.

E-Government projects fall into this category, three examples of which are the European Bank for Reconstruction and Development's small firm assistance through e-procurement system improvement, the Inter-American Development Bank's assistance in smart city planning in Colombia, and smart grid planning assistance in the Dominican Republic. 

by Jung Min-hee

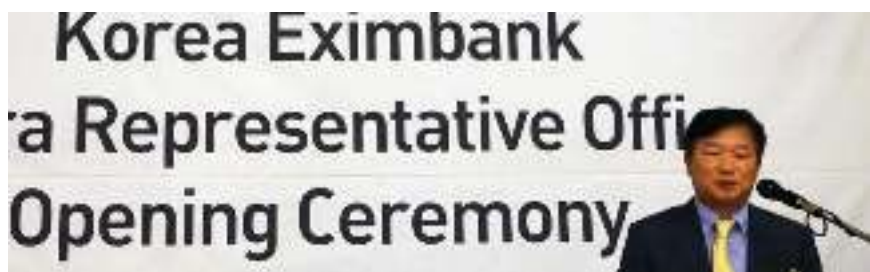
African Development

Korea Eximbank Opens Office in Ghana

The Export-Import Bank of Korea (Korea Eximbank) held a ceremony for the opening of its office in Accra, the capital of Ghana, on May 28, it said.

The office will support social and economic infrastructure development projects in the region with South Korea's Economic Development Cooperation Fund (EDCF), Korea Eximbank said.

Korea Eximbank said, about 100 key persons participated in the ceremony including Lim Sung-hyuk, the vice president of Korea Eximbank; Lyeo Woon-ki, the South Korean ambassador to Ghana; Koji Makino, head of the Ghana office of the Japan International Cooperation Agen-



President Lim Sung-hyuk speaks at the Korea Eximbank Ghana office opening ceremony. (Photo via Korea Eximbank)

cy; William Amuna, president of GRID-Co; Cassiel Ato Forson, Deputy Minister of Ministry of Finance of Ghana; and Millison K. Narh, deputy governor of the Bank of Ghana.

Lim Sung-hyuk said that the Korea Eximbank's office in Ghana will also support South Korean companies' local sales activities in the Western Africa region including Ghana.  by Oh Seung-mock

Manufacturing in Crisis

Convergence Manufacturing Platforms Needed to Break Through the Critical Juncture

by Jung Suk-ye

South Korea recorded a purchasing managers' index (PMI) of 47.8 in May this year, to rank 20th among the 24 countries covered in its survey, according to financial information firm Markit.

Brazil (45.9), Indonesia (47.1), and Russia (47.6) were behind Korea, whereas even Greece, which is on the brink of a default, recorded 48.0. The scores were 49.2 for China, 50.9 for Japan, and 50.4 for the United States. The PMI is one of the most frequently-used manufacturing sector indicators and a PMI exceeding 50 implies economic expansion.

In May this year, exports from Korea decreased by 10.9 percent from a year earlier to show the largest drop in approximately six years. Its mining and manufacturing production decreased by

1.2 percent between April and that month, too.

It was because of the excellence of its manufacturing sector that Korea could tide over the financial crises of 1997 and 2008. The industry accounts for 33.2 percent of its GDP, not to mention a large part of employment. These days, however, Chinese manufacturers are nipping at the heels of their Korean counterparts, while the Japanese regroup on the back of the weak yen.

Samsung Electronics gave way to Apple in the global smart phone market in the fourth quarter of 2014. The former's operating profits for the second quarter of this year are estimated to be 9 percent less than previous expectations. The Hyundai Motor Group's global sales fell by 3.6 percent between the first quarters



of 2014 and 2015, and the group recently dropped out of the list of the world's top 500 enterprises based on market capitalization. The technological gap between Korean and Chinese manufacturers has been narrowed to 0.7 years in the bioindustry, 1.3 years in semiconductor, 1.4 years in automobile, and 1.7 years in shipbuilding.

As far as the global market share is concerned, China has already beaten Korea in steel and oil refining in 2003, petrochemicals in 2004, automobiles and shipbuilding in 2009, and smartphones in the second quarter of last year. Hyundai Heavy Industries, a leading Korean shipbuilder, recorded no less than 1.1 trillion won in operating losses between April and June this year, and rumor has it that the Samsung Group is looking to withdraw from the shipbuilding and petrochemical industries. In the meantime, Japan has strengthened itself further as a technological powerhouse during the last 20 years, and its automakers, machinery suppliers, steelmakers, and petrochemical companies are now standing firm on their source technologies and the weak yen. Toyota, Honda, and Nissan are providing huge discounts to boost their global market shares.

It is well known that the growth of Korea's manufacturing industry has been led by the government and conglomerates since the 1970s. However, this does not work anymore. Major economies expanded their service industries after the ratio of the manufacturing sector to the GDP exceeded 30 percent, but this is not happening in Korea. Instead, manufacturers are failing to surpass technology leaders, while growth is slowing down due to the lack of innovation and new business opportunities. The decline in competitiveness can be attributed at least in part to the low level of efficiency on the part of small and medium enterprises and venture firms.

To compound the matter, the amount of working-age Koreans is predicted to be on the rapid decline, from 37 million after 2016, with skilled workers growing older and young job seekers shunning manufacturing jobs. Wages are rising at a faster pace than productivity, while little flexibility is ensured in the job market.

Experts point out that the manufacturing sector of Korea is in need of a first-mover strategy to overcome the limitation in quantitative and technological growth. According to a Samsung Economic Research Institute's recent report, industry-wide restructuring should be initiated without delay for breakthrough technology, higher labor efficiency, and entity dynamics. It also mentioned the necessity of ecosystems for sustainable growth, closer cooperation between the industry and R&D institutes, and the revitalization of investment in startups.

GE recently suggested the industrial Internet, smart factories, and collective intelligence as the three keywords of a new industrial revolution. The Boston Consulting Group said that now is the time when the fourth industrial revolution has just begun for greater connectivity between manufacturing and intelligence, based on an information revolution. If Korean manufacturing companies can renovate their processes in step with these trends, establish platforms combining hardware with software, and use them well in the oncoming revolution, they can become the most



The industry ministry is pushing ahead with the Manufacturing Industry Innovation 3.0 Strategy.

successful beneficiaries of the new wave.

Well aware of this point, the Park Geun-hye administration has set the goal of a creative economy based on the growth of tech-oriented startups and deregulation as well as the nurturing of converged manufacturing. To realize the goal, the government has mapped out creative economic innovation centers in 17 cities and provinces so that smaller firms can better work together with larger corporations while pushing ahead with a manufacturing industry innovation strategy.

The government has been accelerating convergence in the manufacturing sector and sets the stage for innovation of the industry.


The industry ministry ironed out the Creative Economy Industrial Engine Project and the Manufacturing Industry Innovation 3.0 Strategy as its major pursuits to realize the creative economy.

The Manufacturing Industry Innovation 3.0 Strategy has the three key sub-strategies of the creation of new manufacturing oriented toward industrial convergence, the enhancement of the major segments and the advancement of the industrial infrastructure for innovation.

The public and private sectors raise one trillion won and set up 10,000 smart factories by 2020 so as to speed up the reform of the manufacturing industry through information technology and software convergence. At the same time, they foster the growth of those segments combining manufacturing with information technology, examples of which include the incorporation of information technology into the energy sector.

Also, the core material and component development, engineering, design and software segments receive concentrated support for the enhancement of industrial competitiveness. 10 key materials are to be developed by 2019, earlier than scheduled, and the development of engineering, design and embedded software are fostered.

The ministry released its specific action plans for 13 industrial engines, including wearable smart device and tailored health care system, along with the national manpower development system and plans for the expansion of smart factories and for the enhancement of the soft power in the manufacturing sector.

All in all, the future of the Korean manufacturing industry hinges on whether it can join the ranks of the countries leading the fourth industrial revolution by setting up competitive platforms that combine ICT infrastructure with advanced manufacturing techniques. 

Tiding Over

Korean Companies Concentrating on New Growth Opportunities




In May last year, the Chinese government approved of POSCO's project for building a three million ton integrated steel mill with Chongqing Iron and Steel Company. POSCO is scheduled to take a licensing fee, on a yearly basis, for its FINEX technology to be used at the steel mill. The Korean steel company researched the technology for 23 years, spending more than a trillion won a year.

This is an example of how Korean companies are tiding over the current recession by means of the new businesses they have worked on for over a decade. Their investment for preparing for hard times is bearing fruit amid the weak yen, sluggish domestic consumption, and slowdown of the Chinese economy.

Another of the examples is Samsung, which is focusing on the combination of biotechnology and electronics. Samsung BioEpi recently filed for the approval of SB4, a biosimilar of the rheu-

matoid arthritis medicine Enbrel, in Canada, while accelerating research on the application of electronics technology to health-care.

The Hyundai Motor Group is seeking new opportunities in green cars. It is trying to take the lead in the hydrogen car market in particular, which is predicted to reach 400 trillion won (US\$357 billion) in size in or before 2030. LG Electronics is expanding its business in the auto parts industry. Its Vehicle Components (VC) Division recorded 382.6 billion won (US\$342.4 million) in sales in the first quarter of this year. The Hanwha Group, in the meantime, signed a contract for supplying 1.5 gigawatts of photovoltaic modules in the U.S. in April this year. 

by Jung Suk-yeo

Basic Research

POSCO Seeking to Develop New Extraction Processes



POSCO developed and commercialized FINEX technology in 2007 in cooperation with Siemens


POSCO is developing its clean coal chemical and fuel cell businesses as its next driving forces for growth.

POSCO says that it has developed a technology that directly extracts lithium salt, which will improve the efficiency of lithium production. The new technology enables the production of lithium in two months, and increases the collection rate of lithium to 80 percent, without causing any environmental pollution, POSCO says.

POSCO has also developed a technology that can economically collect 90 percent of the nickel from low-grade ore.

In the rechargeable battery materials sector, POSCO is diversifying its portfolio of cathode and anode materials.

The company has completed the development of the LCO cathode material, which is planned to be commercialized in 2015. The company is also developing a next generation cathode material, gradient type NMC, aimed at commercialization by 2016, it said.

Moreover, the company is expanding the range of its clients by developing natural graphite products with improved quality. The company said that it is also researching a method to commercialize an artificial silicon-graphite composite anode material that it has developed. It is already conducting pilot research with the high-capacity, it said. 

by Seungmock Oh

Constant Improvement

Record High Earnings Lead to SK Hynix's Competitiveness

SK Hynix produces the memory semiconductors of DRAM, NAND flash memory chips, and system semiconductors like



An SK Hynix Semiconductor production line.

CIS. These semiconductors are indispensable for IT equipment like mobile devices and PCs. From 2013 to 2014, the company enjoyed record high earnings. The company posted 17.16 trillion won (US\$15.4 billion) in sales, 1.82 trillion won (US\$1.63 billion) in operating profits, and 1.79 trillion won (US\$1.60 billion) in net profits in the 2014 fiscal year.


The company cited improvements in both the DRAM and NAND flash sectors on the back of the release of new mobile-related products, which allowed the company to offload its inventory.

Since 2007, SK Hynix has focused on strengthening the competitiveness of its mobile products. In 2007, out of the total revenue from DRAM, the revenue from mobile DRAM was a mere 3 percent. However, since 2012, the size continued to grow and has remained at 30 percent. SK Hynix currently dominates the semiconductor market, leading the market trend.

By the end of 2013, SK Hynix developed the LPDDR4 standard, a next-generation mobile standard of DRAM. In Feb. this year, it commercialized the industry's first 8Gb LPDDR4 and mounted it on the latest smartphone. In addition, last Sept., the company succeeded in developing wide-IO2 mobile DRAM, a new generation of high-performance mobile DRAM. With the roll-out of the new item, the company expects to meet demand for high performance products.

The company said that SK Hynix has long prepared for future growth by strengthening competitiveness in the NAND business, which is expected to see high growth. The spokesperson also said that the company will remain competitive for some time as the leader in the DRAM sector by mass producing below-20-nm-class products, and will reinforce capabilities in the NAND flash memory segment by boosting technological caliber.

In 2015, SK Hynix said that it expects the demand for server DRAM to grow due to the rising awareness of the big data sector. The industry's focus switched from double data rate-3 (DDR3) modules to DDR4.

The company expects that the rising demand for DRAM and NAND flash from low-end smart devices will also support the growth of SK Hynix. 

by Marie Kim

Alternative Energy

DSME Pursues Further Growth with 'LNG-fueled Ships



A diagram of the construction of a typical LNG-fueled ship built by the DSME.

Daewoo Shipbuilding & Marine Engineering Co., Ltd. (DSME) is focusing on securing the development of eco-ship technology, as regulations for environmental protection are becoming more stringent. The company is also developing “natural gas propulsion ship” technologies, which are described as being for a next-gen ship.

The DSME says that having anticipated the increased regulations on environmental protection across the globe, the company has conducted joint research projects with MAN Diesel to replace petroleum with natural gas since 2008. Man Diesel developed the ship engine, and the DSME developed a fuel supply system to use natural gas as its fuel. The new technology was commercialized in 2013.

The DSME’s ME-GI LNG carrier provides improved fuel consumption efficiency and operation cost compared to existing carriers. When the DSME’s Partial Re-liquefaction System (PRS) technology is combined with MAN Diesel’s gas injection engines, it increases the fuel consumption efficiency by more than 20 percent in comparison with the existing Dual Fuel Diesel Electric (DFDE) technology.

With the new technology, the DSME received orders for 35 ships in 2014. The DSME’s orders received in 2014 were US\$14.9 billion in total, which was the second highest since the company was established, it said. Moreover, the DSME received orders for 35 LNG carriers and 12 LPG carriers.


The DSME said that the orders were particularly “meaningful,” considering the global recession and decline of oil prices, which made the marine plant market sluggish.

The DSME expects the size of the global market of LNG-fueled ships (LFS) to increase about 10 trillion won (US\$9.0 billion) per year from 2015, up to 100 trillion won (US\$90 billion) in the next eight years.

Small and medium-sized shipyards are considering the LFS as their new force for growth, while the industry in South Korea is experiencing an unfavorable market environment with decreasing orders and the increasing competencies of Chinese and Japanese rivals.

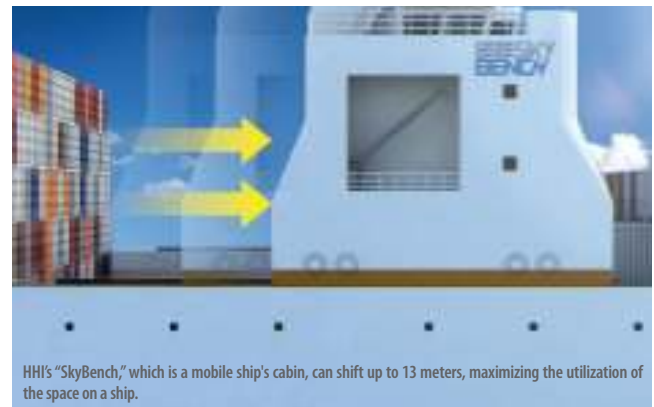
Last Feb., the DSME concluded a number of memoranda of understanding (MoU) with other shipyards in the country to share its LFS design and engineering technology. This is the country’s first case where a big shipbuilding company shares its technologies and patents to enhance the competence of the country’s shipbuilding industry, the DSME said.

The shipbuilder is going to allow its 127 domestic and overseas patents on technologies related to LFS to be used by South Korean shipbuilding companies. This policy is expected to enhance the competencies of the entire South Korean shipbuilding industry.

The DSME has 40 domestic and 4 overseas registered patents related to LNG fuel supply systems, and five domestic PRS related patents, the company said. 

by Seungmock Oh

Replicating Long Experience

Efficiency, Eco, Localization
Keys to HHI’s Future Growth

HHI’s “SkyBench,” which is a mobile ship’s cabin, can shift up to 13 meters, maximizing the utilization of the space on a ship.


Hyundai Heavy Industries (HHI) is focusing on developing highly-efficient and environmentally-friendly ships while securing a new driving force for growth by producing marine equipment locally rather than importing it.

HHI independently developed the “High Pin,” a piece of equipment that improves ship fuel efficiency, the company said. The “High Pin,” attached at the center of a propeller, creates a vortex in the opposite direction of the propeller to neutralize the propeller’s own vortex. As a result, a ship uses up to 2.5 percent

less fuel.

HHI also developed a gas treatment system that performs reliquefaction of boil-off gas (BOG) in an LNG storage tank, the company says. The system reduces the amount of expelled Sox, NOx, and CO₂ by 92 percent, 20 percent, and 23 percent respectively, according to the company.

HHI has also developed a plan for the localization of marine plant equipment, it says. The localization project consists of four stages, based on the degree of localization of 151 components of marine plant equipment used for drill ships, Floating Production Storage and Offloading vessels (FPSOs), and offshore platforms. Last Jan., the company completed the localization of a "Level 1" product. HHI is aiming to complete localization by 2018 in cooperation with small and medium-sized enterprises (SMEs), the company said.

Another technology of HHI that makes ship operation more efficient is the "SkyBench," which is a mobile cabin that can shift 13 meters backwards or forwards, maximizing the utilization of space on a ship. In the case of a 19,000 TEU container ship, a "SkyBench" allows 450 more containers, HHI said. 

by Seungmock Oh

New Growth Strategy

LS C&S' Next-gen Technologies Target the Globe



Recently, LS Cable & System was chosen for the supply of high-voltage harnesses for the ECO automobile of Dongfeng Automobile. (source: LS Cable & System)

LS Cable & System, established in South Korea in 1962, supplies superconducting, submarine, high-voltage, and communication cables to North and South America, Europe, the Middle East, and Asia.

LS Cable & System said that it has also developed automotive high-voltage harnesses and wireless charging technologies targeting the global market.

With the high-voltage harness technology, which the company developed in 2009 by combining existing car cable technologies to high-voltage power technology, the company concluded a contract with Chinese BDNT in 2012 for 120 billion won (US\$106.9 million) of supply until 2017.

Recently, LS Cable & System was chosen for the supply of high-voltage harnesses for the ECO automobile of Dongfeng Automobile. The harness is a cable which connects the communication module and electronic control device, supplying sources of electricity and controlling sensors. For electronic automobiles, the 600V level is used, instead of 12V, which is for general automobiles.


Yoon Jae-in, LS Cable & System's Senior Executive Vice President, said that he expects the new contract with Dongfeng Automobile to be a cornerstone for more orders and accelerate LS Cable & System's activities in the Chinese market.

LS Cable & System is the only South Korean company that does the submarine power cable business, it said. The company built up Asia's largest submarine cable factory in Kangwon province, and entered the submarine cable market, which had been dominated by European companies, LS Cable & System said. Until then, South Korea had been importing all of its submarine cables, LS Cable & System said.

LS Cable & System is further accelerating its advance to the global market with its newly-developed design technology, which enables the production of a 55 km long cable at once, it said.

Last March, LS Cable & System's factory in Donghae shipped a 6600 ton, 100km long submarine cable to Qatar, which was the second shipment for a contract of US\$435 million the company concluded with Qatar Petroleum in 2012.

LS Cable & System said that it is the world's only company with both DC and AC superconducting cable technologies. The company said that with a superconducting cable, almost none of electricity is lost. Therefore its size is 20 percent of existing copper cable, but the DC and AC superconducting cables transmit five and 10 times that of copper, respectively.

LS Cable & System is also developing wireless charging technologies, using its existing cable technologies, it said. In 2012, the company introduced the world's first wireless charging TV, which is based on magnetic resonance. In 2014, it filed a patent for a technology which charges plural devices at once, the company said. The company is also developing a mass charging technology for electronic buses, which is a national project, it said. 

by Seungmock Oh

More Localization**More PPS to be Produced Locally by Toray**

Jun Hae-sang, vice president of Toray Advanced Materials Korea Inc, introduced the company's case of investment in the Saemangeum Industrial Complex on June 10 at the Saemangeum Investment Forum held in Seoul.

Toray Advanced Materials Korea Inc., a subsidiary of Japan's Toray Group, manufactures a variety of industrial materials, specializing in chemical materials. The company's core sectors are film, information technology (IT) materials, non-woven materials, yarn, and resin. The company is now expanding its business to environmental materials such as carbon fiber, water treatment, and renewable energy.

The company said that it has improved its Poly Phenylene Sulfide (PPS) technology via learning from its Japanese headquarters, and will provide a PPS total solution that can create synergy with the automotive parts, electrical, and electronic components businesses, Toray Advanced Materials Korea Inc. said.

PPS resin is a "super engineering plastic" that is light, but has strong heat resistance, chemical resistance, mechanical strength, and flame retardancy. PPS resin can even replace metals, while it is relatively cheaper than other super engineering plastics.

PPS resin is used as a material for engine parts, motor peripherals, electrical parts, connectors for electrical and electronics-related products, sockets, car engines, motor peripheral parts, electrical parts, connectors for electrical and electronic related products, and sockets.

The size of the South Korean market for PPS compounds is


expected to increase from 4000 tons annually in 2012 to 8000 tons in 2020. The global market is expected to expand from 70,000 tons in 2012 to 140,000 tons in 2020. Also, the demand of emerging countries for electronics is expected to increase, too.

Toray opened a factory for PPS in Gunsan in the Saemangeum Industrial Complex, where it began the country's first mass production of PPS resin and compounds.

The industrial complex is convenient for raw material supply, and has excellent infrastructure. It is easily approachable from China, which is the main destination for export. This is convenient because the free trade agreement (FTA) is going to open the country's massive market.

The factory is the world's first comprehensive factory which can produce PPS resin, compounds, and their raw materials like NaSH and p-DCB, the company said. The company plans to supply an annual 8,600 tons of PPS resin, and an annual 3,300 tons of PPS compound by the end of 2015.

Toray is also ambitiously looking into other Asian markets besides China, according to the company.

The company plans to expand its new factory in Gunsan further, so that South Korea can be developed as a strategic core of its PSS resin business. 

by Seungmock Oh

Changing Times**SK Innovation Responds to Structural Crisis**

Jung Cheol-gil, president of SK Innovation, introduced his strategy for new growth in Seoul at the end of May.

President Jung said that the current business environment is a "structural crisis," as the company's main markets such as China and Europe show low growth, which reduces the demand for the company's products. The excessive supply due to shale gas threatens the country's oil and chemical businesses, which relies on export.

Jung said that he will innovate the structure of profit and business to deal with the crisis.

SK Innovation said it will develop a profit structure that can survive in any environment. First, the company will reduce costs of its oil business via diversifying the supply channels of crude oil. Second, the company will improve its productivity of petroleum exploration and production. Finally, the company will expand the production of its own technology-based premium products.



Jung Cheol-gil, president of SK Innovation, introduced his strategy for new growth in Seoul at the end of May.

The company plans to expand its shale gas operations in Oklahoma and Texas, which it bought last year, to the near areas. The company hopes to evolve to be a North American-based company specializing in resource development, which the company named the “U.S. Insider” strategy.

The company also developed a “China Insider” strategy, where it develops partnerships with Chinese companies. It has established a company with China’s largest state-owned petroleum company, Sinopec, which made 83.6 billion won (US\$74.6 million) of surplus in the first quarter of this year, SK Innovation said.

SK Innovation also plans to develop a stable channel for obtaining petroleum by developing partnerships with Saudi Arabia and Kuwait. The company also considers expanding its export channels via developing coalitions with petroleum product importing countries.

For its battery business, the company plans to secure next-generation cell technology as well as cost competencies for stable survival and opportunities for growth. The company plans to employ Beijing BESK Technology, which it established with Beijing Automobile in 2013, to enhance its battery business in China.

For growth within stability, SK Innovation plans to innovate the structure of its revenue and business and secure stable financial structure and continuous investment for growth. In this regard, the company plans to continuously reduce its net debt, which is 6.8 trillion won (US\$6.1 billion) now, while it lists its subsidiaries and sells non-core assets. The company will use the financial resources gained from the innovation for mergers and acquisitions (M&A) or joint venture investments as a part of the reforming of the company’s business structure, it said.

President Jung said that the company is ready for bold preemptive investments whenever it is needed, and will focus on nourishing power for growth for a while. ☞

by Seungmock Oh

Making Food Overseas

CJ CheilJedang Actively Ventures Abroad to New Markets

In a bid to overcome the limitations of the domestic market, CJ CheilJedang is actively venturing into new markets abroad to seek long-term growth. CJ CheilJedang, the food and beverage unit of South Korea’s CJ Group, joins hands with France-based Arkema to invest US\$400 million (437.4 billion won) in a methionine plant which can produce 80,000 tons of L-methionine per year in

Malaysia. On June 4, the company held the opening ceremony of the L-methionine plant in Kerteh in Terengganu, Malaysia.

Methionine is an essential amino acid for animal feed. CJ CheilJedang has started producing methionine by a new environmentally-friendly fermentation process using raw sugar and grape sugar. The company already rolled out the first product by the end of Jan., attracting global attention. Based on its unique technology and expertise in methionine, the company expects stable production in the future. As L-methionine developed by CheilJedang has gained recognition for its excellence in the livestock industry, it will change the landscape of the world’s methionine market, which is currently dominated by petroleum-based DL-methionine. L-methionine shows more than 20 to 40 percent higher bioavailability than DL-methionine, which translates into better absorption in the body.

CJ CheilJedang also broke ground for a flour plant in southern Vietnam in April. “The plant will produce an annual 100,000 tons of flour and 10,000 tons of prepared dry mixes, available for home use and for small and mid-sized commercial bakeries,” the company said. CJ CheilJedang set up a joint venture with Japanese trading firm Sumitomo in May last year. CJ CheilJedang boasts the best milling technology in the world, and Sumitomo has strengths in sales and networking. The two companies invested a total of 50 billion won (US\$46.8 million) in the construction of the plant in Vung Tau. According to CJ CheilJedang, the Vietnamese flour market is estimated at 600 billion won (US\$536 million). Vietnam’s market has witnessed steady growth and is expected to continue to grow due to a growing population and increasing domestic spending power. ☞

by Marie Kim



CJ Cheil Jedang has started producing L-methionine in its plant.

Ginseng Cosmetics

KT&G Targeting Chinese Online Shopping Mall




Beauty products of both Danahan and The Flower Men have entered the Chinese market through local online shopping mall JD.com

Since June 2011, in a bid to explore the high-quality ginseng herbal cosmetics market, KT&G has held a 60 percent stake in the mid-sized Somang Cosmetics company. Somang Cosmetics is known for two brands, “the Flower Men” and “Danahan.”

With this acquisition, KT&G clarified the division between the company’s subsidiary KGC LifeNGine and Somang Cosmetics for their specialized production lines. As such, KGC LifeNGine focuses on the premium herbal cosmetics market, while Somang Cosmetics focuses on less expensive cosmetic markets. In this way the company can maintain dominance in the wide ranging cosmetic consumer segments.

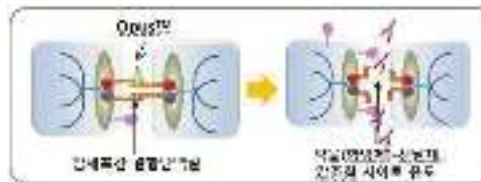
After the acquisition, KT&G enjoyed the synergy effects from the combination of core competencies in health products and ginseng production that the company already has on the one hand. And on the other hand, it enjoyed the production expertise that Somang Cosmetics brought to the table. KT&G officials said that with the acquisition of Somang Cosmetics, the company gained a balanced business portfolio ranging from tobacco to health products and cosmetics. Also, with improved profitability and fast growth, the company was set to compete successfully in both the domestic and foreign markets.

Beauty products of both Danahan and The Flower Men have entered the Chinese market through local online shopping mall JD.com. Focusing on the high-end consumer market at home, Danahan rolled out an intensive Ginseng cream named Palbok in April this year. Made with Korean traditional medical ingredients like ginseng, donkey gelatin, and cordyceps, these products will be available in duty free shops. 

by Marie Klm

Combo Attack

Samyang Develops Anti-cancer Drug Strategy



Opus’ materials help shorten treatment periods and increase the potency of anti-cancer drugs by cutting the connecting areas between cancer cells.

On June 4, Samyang Bio-farm, the bio-pharmaceutical subsidiary of Samyang Group (President Kim Yoon), and U.S.-based Compliment Corporation announced that they signed a contract for a transfer of a tumor infiltration technology. “Opus” is a biomaterial that has the capability to break off the tight linkages that connect cancer cells, which is made of the Desmoglein-2 protein.

Andre Liber, a professor at the University of Washington, first found Opus during the fermentation of *E. coli*, and patented the technique to produce it.


The exclusive rights were transferred to Compliment when the University of Washington separated from the company in 2009. Now, with the newly-signed contract, Samyang Bio-farm obtained an exclusive license to manufacture products with Opus-producing technology.

With this contract, Samyang Bio-farm obtains the exclusive rights to manufacture an anti-cancer drug that combines Opus biotechnology with its own existing nano-scale anti-cancer tech.

The company’s existing anti-cancer drug is unable to penetrate cancerous tissue due to the tight-binding material surrounding it. Treatment of cancerous tissues starts from the surface and takes a long time to penetrate into the center of a cancerous mass. This is bad for the patient, because long-term administration of strong toxic anticancer therapy causes a variety of adverse effects.

Samyang Bio-farm plans to develop the most effective anti-cancer drug yet by combining its tumor-invasive nanotech drug delivery technology and Opus.

A Samyang Bio-farm official said, “We will spur the global anti-cancer drug industry with the development of an anti-cancer drug with the Opus substance,” saying that it will “maximize the therapeutic effects while significantly reducing the side effects.”

Samyang Bio-farm used a polymer-based drug delivery technology, Polymeric Micelle (PM), and has developed the anticancer drugs Genexol-PM Nanoxel, which have already seen commercial success. Polymeric Nanoparticles (PNP), a technology that lengthens the period in which a drug resides in the blood and thus amplifies the effectiveness of even low doses, is used in the production of Docetaxel PNP, and is now undergoing clinical trials before being released. 

by Marie Kim

Regional Matching

Chaebols to Support Assigned Regions to Promote Creative Economy

Korea's conglomerates, or chaebols, such as Samsung, Hyundai Motor, SK, and LG will each be required to build a 1:1 exclusive support system in collaboration with 17 creative economy centers by region.

A high-ranking official at the Blue House, Korea's presidential office, said on August 2, "Samsung Group will be the sole mentor at the creative economy center in Daegu and North Gyeongsang Province, and SK Group will support the Internet-based startups through the Daejeon creative economy center." In this way, a regional ecosystem integrated with big groups will be created.

Samsung Group will provide comprehensive services such as building infrastructure, forming human networks, offering facility test spaces, locating permanent Samsung employees, and transferring marketing expertise to the Daegu City and North Gyeongsang Province Innovation Center. Starting from the opening ceremonies of Samsung Group and SK Group to be held soon, 14 conglomerates and two Internet portal companies, Naver and Daum, will participate in this program by the first half of next year.

Each chaebol will get a province or city. Lotte will be assigned Busan City; Doosan gets South Gyeongsang Province; Hanjin will have Incheon City; KT will be responsible for Gyeonggi Province; Hyundai Motor gets Gwangju City; Hyosung must partner with North Jeolla Province; GS gets South Jeolla Province; LG will go with North Chungcheong Province; Hanhwa will integrate with South Chungcheong Province; and Naver must partner with Gangwon Province. The integration process with these partnerships will be completed by early next year.

By the first half of next year, CJ will be partnered with Seoul; Hyundai Heavy Industries will join Ulsan City; Daum gets Jeju; and SK will be in bed with Sejong City.

President Park Geun-hye said at the cabinet meeting held in the




President Park Geun-hye presides over a cabinet meeting connected to the Sejong Government Complex on Sept. 2, 2014.

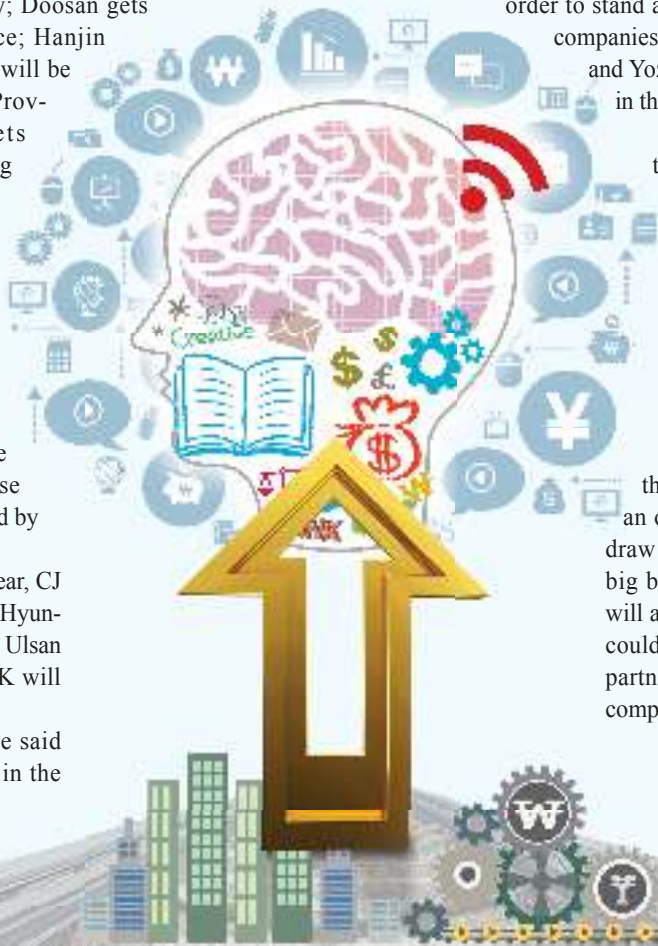
morning of that day, "Considering the major business areas and regional connection of target companies as well as industrial demand from target regions, big business groups and 17 creative economy centers were matched. I expect more companies to participate in this program and create the best creative economy center based on regional specialties and professionalism to become the next KAIST."

The government has formed such a matching system in order to stand against global information technology companies and funds including Google, Alibaba, and Yozma, which are increasing their present in the Korean market.

Big business groups will actualize the ideas and technologies of startups and venture companies in their regions and support these companies to enter the overseas markets. The business groups will also directly purchase advanced technologies from small companies or make equity investment in such companies if necessary.

The Presidential Office projected that this matching system between the regions and big groups will become an opportunity for venture companies to draw managerial or financial support from big business groups. The business groups will also benefit from this system since they could find out new growth drivers through partnerships with small and medium-sized companies. 

by Jung Suk-ye



Manufacturing Aid

Samsung Brings Smart Factories to SMEs

Samsung is supporting the “Creative Economy” policy of the government via partnerships with two Centers for Creative Economy and Innovation, one in Daegu and the other in the surrounding province of Gyeongsangbuk-do. The one in Daegu opened last Sept., while the one in Gyeongsangbuk-do opened in Dec.

Starting this June, Samsung is sharing the patents of Samsung Electronics, Samsung Display, Samsung SDI, and Samsung Electro-mechanics with start-ups and small and medium-sized enterprises via the two Centers for Creative Economy and Innovation, Samsung said.

The Centers are specializing in supporting ventures and start-ups. The Center in Gyeongsangbuk-do specializes in supporting the improvement of the manufacturing capacity of small and medium-sized enterprises (SMEs), as well as their new businesses. In this way the province can become a center for innovation in the manufacturing industry.

The Center in Daegu is aimed at supporting start-ups that combine technology and art. Samsung shares its 38,000 patents in the mobile device, display, communication, semiconductor, and energy sectors, 3,400 patents of which are for free, the company said.

Moreover, Samsung is deploying its expert manpower to the centers in order to enhance the competence of SMEs using its

patents with mentoring. Samsung provides a “matching service,” which offers patents to SMEs in accordance with their needs.

The Center for Creative Economy and Innovation in Gyeongsangbuk-do has been established in Gumi in order to enhance the manufacturing capacity of the Gumi Industrial Complex, support new local businesses, and also aid existing agricultural businesses in the province.


Samsung says that it aims to transform Gyeongsangbuk-do’s “underdeveloped” industrial complex to a “creative industrial complex.”

In the Center for Creative Economy and Innovation in Gyeongsangbuk-do, Samsung plans to make a “Factory Lab,” “Future Lab,” and “Culture Lab.”

First, the Factory Lab will have an automatic manufacturing line based on the Internet of Things (IoT) and manufacturing machines, which will show the future of manufacturing. The center will also educate manpower, and provide consulting.

Second, the Future Lab will be used for a number of projects to support ventures, including an articulated robot for the manufacturing line, three-dimensional imaging software to create new items for manufacturing, and high-precision molding technology.

Third, the Culture Lab will be used to support the digitization of traditional local culture, as well as the industrialization of agriculture.

Samsung also plans to develop 400 smart factories by 2017. A smart factory is a program where Samsung provides its knowledge of Manufacturing Execution Systems (MESs), IoT-based automatic manufacturing, intelligent ultra precision machining, and process simulation, which are all advanced manufacturing technologies. 

by Seungmock Oh



The opening ceremony for the Center for Creative Economy and Innovation in Daegu in Sept.

Creative Economy Model

SK Consults, Develops Business Models for Ventures

SK supports the Center for Creative Economy and Innovation in Daejeon, which opened last Oct. The center has already made sales while attracting both domestic and overseas investments, and also the creation of jobs.

An official from the SK Group said that the center is successfully meeting the goal that it set for six months after its establishment.

The SK Group formed a task force to support the “Creative Economy” policy of the government, which is directly led by Jang Dong-hyun, president of SK Telecom.

In the Center for Creative Economy and Innovation of Daejeon, SK supports potential ventures via one-stop services, helping to launch businesses by providing mentoring, psychological counseling, and legal consultations for free. As a result, five ventures have attracted investments of 1.26 billion won (US\$1.13 million), and three ventures made sales of 694 million won (US\$62,011) by Jan. 17.

As a result, ventures could develop their businesses with the help of the center. For example, Hwang Min-young established his company, MJV, which provides automatic video production

solutions. MJV has attracted a number of investment suggestions at Silicon Valley.

The SK Group has also supported three ventures to enter the American market, employing the group’s overseas partners.

Moreover, the Group provides an online platform that connects technologies and sources of demand in order to support technology businesses the group said.

SK itself also has a fund of 50 billion won (US\$45 million) to invest and provide budgets to potential start-ups and ventures. Such a big investment fund addresses the region’s lack of funds for ventures. By last March, the ventures incubated in the Center for Creative Economy and Innovation in Daejeon attracted investment of 1.5 billion won (US\$) in total. Moreover, the SK-KNET fund plans to directly invest in the ventures in the region, which will help Daejeon’s economy.

The Group also provides facilities such as 3D printers, application testing equipment, and education on business and information technology (IT).

The SK Group also plans to develop a business model with nine ventures, in which the group and ventures cooperate for product development, marketing and overseas market entry, the group said.

The cooperation between the conglomerate and the ventures has attracted the interest of overseas experts from the embassies of the United States and Switzerland in South Korea, the National Science and Technology Development Agency of Thailand, and scholars around East Asia. 

by Seungmock Oh



Students and scholars of the Wharton Business School of the University of Pennsylvania pose for a photo after visiting the Center for Creative Economy and Innovation of Daejeon on June 10 to discuss cooperation between the SK Group and ventures.

Hydrogen Energy Economy

Hyundai Motors to Run Ecosystem on Hydrogen

On Jan. 27, the municipal government of Gwangju, in association with the Hyundai Motor Group, launched an economic innovation center in the city. President Park Geun-hye herself attended the opening ceremony. Drawing on its expertise and business acumen, the Hyundai Motor Group, the representative corporation for Gwangju, has pledged to provide consulting services for novice entrepreneurs who want to open businesses in automotive parts, hydrogen fuel cells, and smart factories.

The areas of focus at the Center are hydrogen fuel cell-related industries, automobile parts and software, smart factories by small and medium ventures, and the local arts and cultural industries.

As a hub of entrepreneurship for local start-ups, the Center provides one-stop support services for local start-ups. The center runs a facility called the "Open Innovation Center" where 3D printers, UV spectroscopy machines, automotive parts, and auto-related search engines are available for users.

Open Contest for Start-up Ideas

The Center for Creative Economy and Innovation in Gwangju leads the search for good start-up ideas, which is an important part of founding a creative economy. On May 20, President of the Center Yoo Ki-ho and representatives from the Hyundai Motor Group hosted an "H-start-up Festival" at Chosun University. Two hundred people attended the festival, including Cha Yong-hoon, the leader of the Industry-Academic Cooperation Foundation of Chosun University, Kang Sung-tae, the president of gongsindot.com, and the 28 best teams from "the open start-up contest idea."

"H-start-up Festival" was organized to encourage entrepreneurship among young people. From February to March, a total of 533 teams signed up for the contest. Twenty-eight teams were

selected after the preliminaries. In order to materialize their creative and innovative ideas, these teams received one-on-one mentoring for two days and one night at Namsan Youth Hostel in Seoul. In addition, these selected teams will be matched with Hyundai teams to receive a full range of follow-up support in the legal, technical, patent, and financial areas.


The Center and Hyundai plan to construct a "hybrid energy station," a cornerstone of an economic ecosystem dependent on hydrogen fuel cells. On June 11, Kwon Mun-sick, vice president of the Hyundai-Kia Automotive Group; Yoon Chang-hyun, mayor of Gwangju Metropolitan City; and Yoo Ki-ho, president of the Center for Creative Economy and Innovation in Gwangju signed a business agreement to launch hybrid energy stations and test drive hydrogen powered buses. This innovation center in Gwangju will spearhead the task of spreading the use of hydrogen energy power across the country.

Since March of this year, the innovation center made a public business offering for hydrogen-related venture companies to participate in its projects.

Vice Chairman of Hyundai Motor Kwon Moon-sik said that "building the hybrid energy station will contribute to spreading hydrogen charging infrastructure. Overall, the popular understanding of hydrogen fuel cells will be enhanced."

At the early stages, the station will only perform the primary functions with CNG and LPG fueling facilities. Then it will add more functions including the production, storage, and charging of hydrogen and electric fuel cells.

The hybrid energy station is considered to be a cornerstone to foster the development of hydrogen fuel cell-related industries and an economic ecosystem dependent on alternative energy sources. The Center, working with relevant organizations, also contributes to the production of legislation and regulations relevant to hydrogen power.

In order to develop and certify new hydrogen fuel cell technologies and encourage entrepreneurship and commercialization, the Center will raise funds through a ladder growth fund and a hydrogen fund worth 15 billion won (US\$13.3 million). 

by Marie Kim



"H-start-up Festival" was organized to encourage entrepreneurship among young people. From February to March, a total of 533 teams signed up for the contest.

Combining Old and New

LG Set to Promote Beauty, Bio, Energy Industries



LG Group chairman Koo Bon-moo (left) points out the raw materials of cosmetics to President Park Geun-hye.

On June 4, President Park Geun-hye; Lee Si-jong, governor of Chungcheongbuk-do; Gu Bon-moo, President of the LG Group; other executives of LG Group and the government of Chungbuk Province; and about 140 entrepreneurs of small and medium enterprises (SMEs) gathered at the Knowledge Industry Promotion Agency in Ohchang, Chungcheongbuk-do, to celebrate the launching of the Center for Creative Economy and Innovation of Chungcheongbuk-do.

Located inside the Chungbuk Knowledge Industry Promotion Agency, the Center for Creative Economy and Innovation of Chungcheongbuk-do focuses on the beauty, biotech, and environmentally-friendly energy industries, and is positioned to foster a business environment marked by an ecosystem where both large and small businesses thrive in a mutually-beneficial relationship.

Despite manufacturing technology and equipment, there are many SMEs that are struggling to break into the market due to their lack of new innovative ideas. At the same time, these companies feel a huge burden to access patented technologies for high licensing costs. For these companies, the Creative Economy center offers practical help by ensuring free access by SMEs to intellectual property owned by LG officials and government-funded

research institutes.

For instance, the innovation center provides an IP support zone. Through this zone, local SMEs can access 20,007 LG-owned patents and 1,006 government-funded research institute-owned patents at minimal or zero cost. The disclosed patents cover specialized industries such as beauty, biotechnology, energy, electronics, chemicals, and telecommunications.

In addition, in cooperation with the Korean Intellectual Property Office and the Ministry of Science, ICT and Future Planning Patent Office, the Center plans to establish a “national IP hub,” which will be available to all Korean companies.

This region is originally famous for the cultivation of raw materials and natural herbs for cosmetics. For this reason, 100 cosmetics companies, including LG, are clustered close together here, and their production accounts for 27 percent of national cosmetics production.

In addition, with a state-of-art medical complex and Osong Life Science Complex both nearby, the biotech industry in Osong has enjoyed a record high growth of 76.5 percent during the period between 2008 and 2012. The province also has 1,400 environmentally-friendly companies relating to solar energy, batteries, and water treatment businesses, accounting for 60 percent of the domestic photovoltaic module production.

The synergy from the combination of industrial features of Chungcheongbuk-do on the one hand and the technology and business expertise of LG affiliates such as LG Household & Health Care, LG Life Science, and LG Hausys on the other is a powerful combination. With this power, the Center is well positioned to create a mecca of the energy, biotech, and beauty industries.

LG Group Businesses in Chungcheongbuk-do


LG Electronics has been producing material component products such as optical materials for display, energy, and eco-materials at the Cheongju business site in Cheongju Industrial Complex which stretches over 11 million m².

LG Innotek is producing environmentally-friendly packages for mobile devices at its Cheongju Industrial Complex.

LG Chem is operating 2 business sites in Cheongju, Chungcheongbuk-do: Ohchang business site and Cheongju business site.

LG Hausys is operating three workplaces: the Cheongju business site, Changho & Cheongju workplace/PSAA workplaces, and LG TotemBM, a joint venture with Japan-based Totem.

LG Household and Health Care has been manufacturing toothpaste in Cheongju, Chungcheongbuk-do since 1979. The plant's annual production value is about to reach 2 trillion won (US\$1.8 billion).

LG Life Sciences stretches across 165,000 m² of Oh-Song Life Sciences Complex in Cheongju. The Oh-Song campus is a launching site for exports. 

by Marie Kim

Regional Responsibility

Lotte to Help Startups Grow in Film, Logistics Industries

Korea's centers for creative economy and innovation provide extensive help to those looking to start a business, from one-on-one mentoring services to customized legal advice. To get more information, BusinessKorea sat down with Cho Hong-geun, Head of the Center for Creative Economy and Innovation in Busan, and asked him questions about the Lotte Group's participation in Busan and its effects on businesses related to the local flagship products of the city.



President Park Geun-hye, Busan Mayor Suh Byung-soo, Minister of Science, ICT and Future Planning Choi Yang-hee, and the CEO of Lotte Group Shin Geok-ho attended the opening ceremony.

Tell us the background that led the Lotte Group to participate in the operation of the Center for Creative Economy and Innovation in Busan, and the duties that the center performs.

The Center for Creative Economy and Innovation in Busan is positioned to play a role as the local agency to lead local efforts in pioneering new markets, efficient use of resources, improving the competitiveness of local companies, and business innovations.

The paradigm adjustment of our traditional manufacturing industries to creative economic activities has to be accompanied by substantial achievements at the grassroots level. In order to fulfill this requirement, the creativity and innovations have to be grounded in the local business environment.

Lotte has long been associated with Busan, and the association traces its origin to the foundation of the Lotte Giants baseball team in 1975. Lotte feels a heavy responsibility for the task of participating in the operations of the Busan Creative Economy center.

The Center for Creative Economy and Innovation in Busan

is located in Busan's Centum City, Haeundae-gu. Out of 17 innovation centers nationwide, the Busan center was 17th to launch operations on March 16th, 2015. The areas of focus are distribution channel, film, and the Internet of Things.

Tell us about which business areas the Busan center emphasizes most, and what programs (investment funds, global expansion support, training, center, facilities, etc.) the center pursues in supporting them.

For our long-term objectives, the Busan center is set to build a smart city. To this end, the center plans to promote the creation of a smart cluster. The center provides a support system for founding new enterprises by providing space, mentorship, and consulting services free of charge. The center plans to contribute 20 billion won [US\$18 million] in direct investment. Additional investment will be made as needs are identified. The center is equipped with useful facilities for prospective entrepreneurs to experiment with their ideas. These include a prototyping and production room, and a test-bed room.

What are the responses from small and medium enterprises (SMEs) like? What programs or projects have received the most favorable responses?

The center is equipped with facilities that support prospective start-up ventures from the early stage of planning to the latter stage, where ventures build up marketing skills. Drawing on rich resources in distribution channels online and offline, Lotte will help ventures with marketing and match them with appropriate distribution channels to break into new markets.

The local distribution sector has shown strong interest. In fact, some of our past participants have reported an increase in their sales after their visit.

Can you tell our readers about projects that you have carried out through the center?

The local flagship products like fish cakes, tomatoes from Daejeon, and salted seafood witnessed increases in their sales after marketing via a live TV home shopping network. Small local enterprises also succeeded in raising awareness of their products via special sales organized by Lotte Department Store.

In addition, the Center for Creative Economy and Innovation in Busan made it possible for budding local footwear shops and designers to sell their products at tourist gift corners in Busan Lotte Duty Free Shop. The center also secured three screens for budding non-commercial movie makers, and now 60 non-commercial movies can be annually screened. The center hopes these efforts will contribute to creating an ecosystem for the film industry. 

by Marie Kim



Cho Hong-geun, Head of Center of Creative Economy and Innovation Center

Flourishing Mechatronics

Doosan to Play Key Role in Creating Hub of Mechatronics



The "Maker Space" facilities of the Center for Creative Economy and Innovation of Gyeongsangnam-do.

The Center for Creative Economy and Innovation of Gyeongsangnam-do opened on April 9, marking the day when Doosan joined forces with the Ministry of Science, ICT and Future Planning, Ministry of Trade, Industry and Energy, and the government of Gyeongsangnam-do. In essence, the center is positioned to enhance the competitiveness of local mechanical engineering, and thus overcome the limitations of the traditional mechanical industries.

The areas of business that the center focuses on are creating a hub of mechatronics, fostering water-related industries, the systemization of a "one-stop" support center for small and medium enterprises (SMEs), and the development of the anti-aging biotech industry.

To finance these businesses, Doosan and government officials aim to raise funds using various financial instruments. They seek to raise 30 billion won (US\$26.7 million) through ladder growth funds created by Doosan and the government of Gyeongsangnam-do by 2020, 80 billion won (US\$71 million) through a Doosan mutual growth fund, and 10 billion won (US\$8.9 million) by Neoplux, the financial subsidiary of Doosan. Altogether, Doosan is expected to contribute about 120 billion won (US\$106 million) in support of 800 local small and medium enterprises (SMEs). Doosan also separately provides about 50 billion won (US\$44 million) via trust guarantee funds to be used for loans for retirees.

In addition, in order ensure smooth operations of the Creative Economy center, 148 participating agencies and companies signed Memoranda of Understanding (MOUs).

Leading Mechatronics Innovations in Manufacturing

By drawing on the traditional industrial base in Gyeongsangnam-do, both Doosan and government officials aim to lead innovations in manufacturing and spread the presence of smart factories. Featuring smart sensors and intelligent robots, smart factories will upgrade and enhance the efficiency and productivity of the traditional manufacturing facilities in the region.

A long-term plan is to develop a new, innovative manufacturing belt 3.0 in the southeastern region which covers both Gyeongsangbuk-do and Gyeongsangnam-do.

As a trial, the center will pursue the development of cryogenic materials, unmanned aerial vehicles, remote monitoring systems, and the localization of fuel tanks for helicopters for export.

Equipped with state-of-the-art facilities like 3D printers, users can experiment with prototypes and test parts. Also, there is a "Maker Space," which represents a space for socialization or networking. Local universities, research institutes, and entrepreneurs can join in providing services relevant to training, certification, and commercialization of the new parts and machines.

Promoting Harmonious SME-Conglomerate Relationship

Big and small businesses will pool their networking resources and launch an online database called I-Gen Marketplace, which will enable companies to access myriads of networks to find business partners. The center will also have a space called the "Senior Support Center." This space is especially arranged to facilitate the transfer of knowledge and skills from middle-aged savvy engineers and business consultants to younger people.


Water Industries

Doosan nurtures alternative water resources as the next engine of growth, based on its world-leading desalination technology. For a desalination project, Doosan plans to lead the localization of equipment needed for desalination and promote local ICT.

One-stop Support System

The heart of "one-stop support services" is to provide SMEs and venture start-ups with step-by-step customized services that consist of consulting in legal, patent consulting services.

Nurturing Anti-Aging industries

The Creative Economy Center in Gyeongsangnam-do, in association with its sister center in Busan, plans to turn natural herbs into value-added natural anti-aging products. Executive officers and retirees from Doosan will provide consulting services for marketing and commercialization of the natural products. 

by Marie Kim

Entertainment Driver

CJ Helps Young Artists Create Cultural Content

The CJ Group is participating in the Center for Cultural Creative Convergence in order to develop the country's cultural content industry, contributing to the economy.

The Center for Cultural Creative Convergence opened at the CJ E&M center in Seoul on Feb. 11. The center coordinates global convergence content and develops industry infrastructure in its role as a control tower of the Cultural Creative Convergence Belt, which the government is establishing to develop the country's cultural industry.

Lee Jae-hyun, chairman of the CJ Group, said that the next driving force of the country's economy will be the cultural industry, which is the only industry in which South Korea can expand the development gap against China over the next 20 years.


The Center plans to develop an environment in which a new concept of content, which combines analog and digital, art and technology, can be developed, CJ said. Along these lines, the center supports creators to develop convergent cultural content targeting the global market. Meanwhile, the center also provides the highest-quality facilities to these creators for free, as well as lectures and inspiring exhibition events.

Kang Myung-shin, head of the Center for Cultural Creative Convergence, said that the center is not only a support resource

for business development, but also the development of a solution that would satisfy what the market wants, or even lead the market.

When President Park Geun-hye spoke at the opening ceremony for the Center, she introduced the specific details of the center's projects. The center's two main goals are developing convergent content in cooperation with leading experts of the cultural industry targeting the global market, and mentoring content creators and small and medium-sized enterprises (SMEs) so that their ideas attract investment, which will lead to new businesses.

The center's facility resources include exhibition rooms for created content, which provide opportunities to communicate with experts and investors; a Media Library, which will keep a digital archive of convergent content; and the Creative Lounge, where creators and experts can discuss cooperation and develop their personal networks. The Center also houses a Story Hub, Play Hub, and Lifestyle Hub, places for convergent content creation and mentoring aimed at supporting talented creators. There is also the Lab, which provides professional production facilities for convergent content and the opportunity for leading experts to mentor younger up-and-coming artists. Future plans include the introduction of other labs, like a Story Lab, Multi Lab, Craft Lab, Sound Lab, and Idea Lab, which will support experts from a number of sectors; a Motion Studio, which provides facilities for the digitization of motion; and a Talent Studio for testing newly-created content and matching investors.

The center will function as a bridge connecting creators, experts, and enterprises aimed at the development of global convergent content. 

by Seungmock Oh



The CJ Group is participating in the Center for Cultural Creative Convergence (photo) in order to develop the country's cultural content industry, contributing to the economy. (source: CJ)

Unexpected Synergies

Naver to Revitalize Regional Old Industries via Big Data

BusinessKorea was able to sit down with the Head of the center, Han Jong-ho, and ask him questions about the progression of the center and his future plans. What follows are excerpts from the interview.



The Center for Creative Economy and Innovation of Gangwon-do opened on May 11 with a focus on building a Big Data repository for Korea's creative economy ecology.

Tell us the background behind Naver participating in the operation of the Center for Creative Economy and Innovation of Gangwon-do and the unique characteristics of your center to contribute to potential synergy effects.

Gangwon-do's unique ties with Naver can be traced back to the period before the inception of the Center for Creative Economy and Innovation of Gangwon-do. In 2007, Naver moved a subsidiary responsible for customer service to Chuncheon City, Gangwon-do. In 2013, the company also built a data center named "Kack" at the foot of Gubong Mountain in Chuncheon, Gangwon-do.

Upon learning about the government's vision for joint projects of the private and public sectors and launching of regional agencies nationwide, Naver decided to make a meaningful contribution by mobilizing the companies' competencies i.e., crowdsourcing and Big Data. Capable of analyzing a large amount of data, Naver can contribute to creating new industries and revitalizing old ones like tourism, medical care, and agriculture.

Eighty-two percent of the total area of Gangwon-do consists

of mountains. For this reason, the province is characterized by limited infrastructure and human resources to mobilize for industrial growth. But these limitations can be seen as opportunities for Gangwon-do.

These geographical features of Gangwon-do don't present obstacles for development of Information and Communication Technology [ICT], because the industry doesn't require a huge factory complex. Rather, undisturbed wild natural areas are great tourist attractions in and of themselves.

What projects does the Center emphasize most, and how does the center plan to carry them out? Tell us about how the center plans to support its programs like investment, training, distributional channels, and center facilities.

The Center divides its missions into "functional tasks" and the "industrial field." For functional tasks, the center focuses on Big Data, crowdsourcing, and O2O. Regarding the industrial field, the center has three chosen fields to focus on: tourism, medical care, and agriculture.


To fulfill the above-mentioned tasks, the center provides a full range of services including facilities, training, and consulting services.

First, regarding the training program, our center, working with Naver, will teach students in Gangwon-do how to produce mobile homepages. With the completion of the curriculum, students can become professional instructors who can teach website production techniques to small business owners.

Next, with respect to the center facilities, our center is well-positioned to assist start-up winners from various contests with their promising entrepreneurial ideas. The center provides space to accommodate various activities and experiments to speed up their preparation process before launching businesses.

Speaking of one-stop consulting experts in legal, financial, and patent issues will provide relevant services at the center. Prospective entrepreneurs can receive a full range of services in one sitting.

What are the responses from small and medium enterprises like? What programs or projects have received the most favorable responses?

Local businesses and academia have shown strong interest. For instance, on June 16, the preliminary round for an idea entrepreneurship contest took place for qualifiers from Gangwon-do. Despite the low level of awareness, the contest received a large number of items relating to Big Data, tourism, medical and healthcare. 

by Marie Kim



Han Jong-ho, Head of Center of Creative Economy and Innovation Center

Comprehensive Focus

Hanwha Develops Energy, Agricultural, Tourism Industries

The Center for Creative Economy and Innovation of Chungcheongnam-do has opened in Cheonan. It plans to support the region's small and medium-sized companies (SMEs) and overseas ventures while improving the quality of agricultural goods.

Chungcheongnam-do is the center of the country, linking the nationwide transport networks. It also has plenty of farmland as well as a number of islands off its shores. The region has well-developed traditional agriculture.

In accordance with the opening of the Creative Economy center, the Hanwha Group said that it will develop a hub of the solar power industry in the region and contribute to the improvement of farmers' earnings. The company will also build a platform which will support the overseas market entry of SMEs and start-ups, it said.

The Hanwha Group said that the Creative Economy center will construct a solar power industrial cluster in the region via Hanwha's existing solar power businesses, the solar power manufacturing factory of the region, and the research and development capability of the Innopolis Foundation in Daejeon.

The Hanwha Group and the Creative Economy center plan


to make the island of Jukdo 100 percent self-reliant on energy supplies using solar-rechargeable batteries, Hanwha said. Jukdo has 70 inhabitants forming 31 households, and previously produced energy using diesel power. The Center also plans to further increase the number of islands with self-reliant energy supplies.

The Center has installed "Trade Zones" at the Cheonan and Ahsan KTX stations in order to provide opportunities for global market entry to the country's ventures and SMEs, as well as to discover start-ups with the potential for overseas businesses, Hanwha said. In the Trade Zones, experts provide information about support for trade with SMEs while collecting their requests for overseas market entry, Hanwha said.

The KTX Ahsan station has a business center running a Global Expansion Program (GEP) developed and operated by Hanwha S&C, which supports overseas businesses for startups. The GEP supports selected start-ups' entry to Japanese, Chinese, and Vietnamese markets, as well as 20 million (US\$17,863) won per start-up. The GEP selects 15 start-ups a year, Hanwha said.

The Center for Creative Economy and Innovation at Chungcheongnam-do will also develop a brand of agricultural goods for the region while developing the processing and distribution industries that may increase the income of agricultural households in the region.

The Hanwha Group will distribute the agricultural products of the region nationwide via its chain of Galleria department stores, the group said.

Hanwha also plans to employ its luxurious recreation facilities such as Daecheon Hanwha Resort and Taeahn Bay Resort to enhance the competence of the region's tourism industry, in addition to supporting the development of agricultural tourism services. 

by Seungmock Oh



Hanwha Group said that it will develop a hub of the solar power industry in the region and contribute to the improvement of farmers' earnings. (source: Hanwha Group)

Foothold of K-Food

Environment-friendly Businesses to Flourish under GS's Care

The GS Group is developing environmentally-friendly business infrastructure in Jeollanam-do.

Having established the Center for Creative Economy and Innovation in Jeollanam-do in cooperation with the government, GS Holdings plans to develop facilities and infrastructure specialized in “environmentally-friendly” businesses, the GS Group said.

The company is working to create synergy of “its own strength and the province’s” in a number of sectors, as well as support ventures and small and medium-sized companies for global competence.

The Creative Economy center plans to use the region’s islands, environmentally-friendly foods, and cultural resources to develop tourism products targeting tourists not only of the country, but also across the globe.

Jeollanam-do has warm weather and a natural environment that is easily accessible with Korea Train eXpress (KTX), South Korea’s high-speed rail system. Chinese tourists have visa-free entry to Muan International Airport there, as well as a cruise ship of 150 thousand tons.

In order to develop tourism products, the Center will employ big data analysis of tourist consumption patterns, and databases of the region’s tourism resources.

The center will also develop and commercialize the cultural content of the region via story development, branding of the region’s history, and resources.

As a pilot project, “GS Shop’s tourism M.D.,” tourism ventures, and local communities will form a task force to develop retail tourism goods such as healing, local specialties, and islands

that will be tailored for both nationals and foreigners, the GS Group said.


A GS Group representative described the environment of Jeollanam-do as the “most appropriate” for developing agriculture and fisheries to have “high value,” as it has “the best environmentally-friendly base,” as well as an increasing younger generation.

The GS Group says that the Creative Economy center will systematically nourish agricultural and fisheries ventures by providing three major services. The first will be a “one-stop service” for entrepreneurship that provides information of relevant organizational support and mentoring. The second will be 21 residences for entrepreneurship activities, tailored production facilities, and educational programs tailored for agricultural cultivation, food processing, functional food development, and information and communications technology (ICT) sectors. The third will be the branding of Korean food (K-Food) targeting the Chinese market, which will be expanded due to the free trade agreement (FTA), for which five experts from GS will provide consulting and support to secure domestic and overseas sales channels with existing distribution channels of GS.

Jeollanam-do is a supplier of agricultural products and also has the technological infrastructure of a chemical industrial complex in Yeosu. Therefore, the Center plans to develop its biochemical industry via the cooperation of conglomerates and small and medium-sized enterprises (SMEs) with its infrastructure, the GS Group said. The Jeollanam-do Center plans to construct a plant specializing in the production of biochemical goods, while it develops a cooperative industrial ecosystem among the related companies, a GS representative said.

GS is particularly going to support ventures and SMEs related to GS’s bio-butanol and biopolymers business, which is to be established in Yeosu.

Biochemistry is an industry that uses raw organic material like corn and sugarcane to produce biochemical goods used as fuel and material for plastics, the GS Group said.

GS Global, a subsidiary of GS, will support about 50 SMEs producing environmentally-friendly pesticides and fertilizers of the region to expand their market reach.  by Seungmock Oh



The GS Group is developing environmentally-friendly business infrastructure in Jeollanam-do.

Beacon Platforms

Daum Kakao Hopes to Create Korean Version of Silicon Beach

On June 26, the Ministry of Science, ICT and Future Planning joined forces with Daum Kakao Corp., the operator of the country's most popular messaging app KakaoTalk and the Internet portal Daum, to open a Center for Creative Economy and Innovation on the southern resort island of Jeju. The innovation center is the 13th of its kind in South Korea. BusinessKorea spoke with Cheon Jung-hwan, the Center's new president, and asked him about his vision for the Center and how it can help the local area in the future.



Based on the island's business infrastructure and inspirational scenery, the Jeju center aims to lure more young entrepreneurs to the island, mimicking California's Silicon Beach.

Tell us about the business vision and overview of the work done by the Center.

The vision that we hold is to blend together work, recreation, and cultural activities and thereby encourage creativity.

By fostering start-ups in connection with their relevance to existing cultural content, we hope to create a Korean version of Silicon Beach. To attain this goal, it is necessary to build "beacon platforms" all over Jeju so that everyone on Jeju Island can have access to the Internet. This will also spur tourism and commercialization of high value-added services. In addition, installation of these beacon platforms will help spread the use of renewable energy and render Jeju carbon-free.

How do you think the Center for Creative Economy and Innovation can help revitalize the economy of Jeju?

One of the growing trends of Jeju is that recent immigrants from outside are "artistic types." The center will promote the production of crafts and the creation of software using people's creativity, and try to combine the two areas as people start up businesses.

In addition, the center will encourage the traditional industries of Jeju, like tourism, and implement the latest location-based technology, "beacon platforms," throughout Jeju so that everyone can access the Internet.

How do you think the Center will cooperate with local partners?

In a bid to create jobs for young men and support founding new businesses, the center provides mentoring and training courses via an app. The center encourages entrepreneurship among young people by hosting various competitions and programs relevant to entrepreneurial ideas. Instead of exposing the prospective entrepreneurs to a dry business environment, the center will seek to develop interesting programs to pique the interest of young people and induce voluntary participation.

Who is the main target of the support that the center provides?

The center is open to individuals as well as start-ups, small businesses, and prospective company founders. For people interested in the culture and the arts, the center can offer a cultural content database and image mentoring, which is provided in conjunction with the "cultural convergence belt." The center also has supporting facilities like 3D printers and studios. For those who are interested in tourism-related services, the center can offer access to Big Data, which especially focuses on tourism and an SDK for a smart tourism platform. The center also provides training in app development and offers a tourism curriculum.

Tell us about your expectations in launching the Center.

I hope the Center will represent a solid base for innovation and local entrepreneurship. I also hope the center will make a substantive contribution to Jeju's economy by creating many jobs. The center will make a good partner for people who have good ideas but struggle, not knowing how to commercialize their products and lacking in marketing skills. The center will be a reliable partner for companies struggling to make profits and encountering challenges finding distributional channels. 

by Marie Kim



Cheon Jung-hwan, Head of the Center for Creative Economy and Innovation

Lower Growth

KIF First to Forecast Nation's Growth Rate at 2% This Year

The Bank of Korea announced on June 4 that Korea's real GDP is estimated to have increased by 0.8 percent quarter-on-quarter in the first quarter of this year. The real GDP growth rate had been at 1.1 percent in the first quarter of 2014, but more than halved to 0.5 percent in the second, led mainly by sluggish domestic consumption that followed the Sewol ferry disaster in April. The figure edged up to 0.8 percent in the third quarter but dropped back to 0.3 percent in the last quarter of 2014.

This can be attributed to today's poor export trade performance. According to the Korea Development Institute (KDI), Korea's year-on-year export growth rate on a customs clearance basis went up from 1.6 percent to 3.2 percent and then to 3.6 percent in the first to third quarters of last year, but nosedived to 0.9 percent and negative 2.9 percent in the following quarters.

Economists' consensus is that the low growth is likely to continue for a while, and on June 3, the OECD adjusted its Korean economic growth forecast for this year from 3.8 percent to 3.0 percent. The Middle East Respiratory Syndrome coronavirus (MERS-CoV) is highly likely to affect the Q2 growth rate as well. Not a few experts point out that even 3.0 percent could be a tall order.

Amid such gloomy forecasts, the Korea Institute of Finance (KIF) projected the nation's economy to grow at only 2 percent this year for the first time among the local major economic research institutes. The factors for the lower growth rate prediction came from both home and abroad – slower domestic demand and sluggish exports.

The KIF said on June 17 that the



Samseong Station intersection in Daechi-dong, Seoul, South Korea. The entire surrounding district was created in the last 50 years, a product of Korea's growing economy.

Korean economy would reach only 2.8 percent growth this year, down 0.9 percent from its earlier forecast of 3.7 percent, citing the economy suffering from a slump in exports and a sharp shrink of consumption owing to the unexpected outbreak of Middle East Respiratory Syndrome (MERS).

The KIF projected private spending to slightly increase to 2 percent from 1.8 percent last year, backed by the recovery of consumer sentiment thanks to some gains in the local stock and property markets.

The think tank, however, pointed out that growth will be strained by structural factors such as decreasing spending due to growing household debt, as well as temporary factors like the MERS outbreak.

The KIF said that the MERS outbreak is likely to shave off gross domestic product growth by 0.1 percentage points due to a fall in spending in the service and retail sectors.


Exports were forecast to grow 2.3 percent, down from a 2.8 percent increase in 2014, as unfavorable currency circumstances and weakening growth in China offset some economic recovery in

advanced economies.

Such sluggish domestic consumption and exports will also drive the facility investment growth rate to fall to 4.4 percent from last year's 5.8 percent, according to the think tank.

The KIF's growth rate revision is the latest in a series of economic forecast downgrades by economic institutes both at home and abroad. The Korea Development Institute cut the forecast to 3 percent from 3.5 percent, and the International Monetary Fund lowered the growth rate to 3.3 percent from 3.7 percent.

The finance ministry and the central bank, which are both slated to release their revised economic forecast in the coming weeks, are also expected to lower their previous forecasts, taking into consideration the impact of MERS on the economy.

Under the circumstances, Shin Sung-hwan, president of the KIF, stressed on that day that the nation should not rule out room for additional basic rate cuts. 

by Jung Suk-ye

Low Rate Back Blast

Bank loans to Households, Companies Surpass 1.300 Quadrillion Won

According to depository financial institutions, household debt surged by more than 10 trillion won (US\$8.93 billion) in a month.

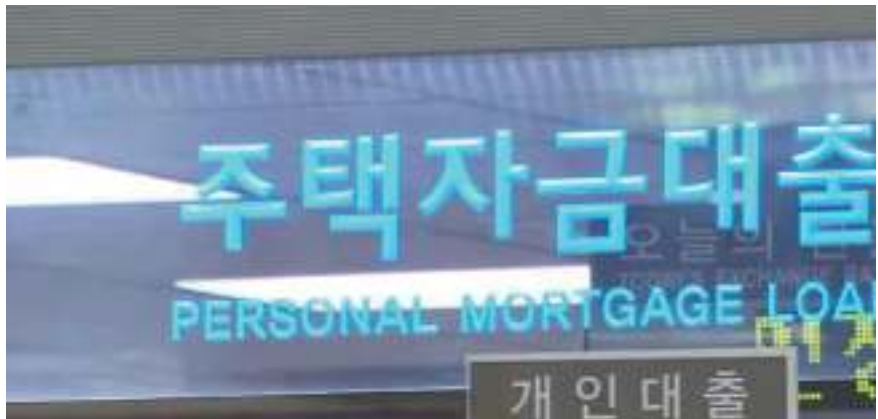
The Bank of Korea announced on June 9 that household debt by depository financial institutions increased by 10.1 trillion won (US\$9.02 billion) to 765.2 trillion won (US\$683.28 billion) from a month ago.

This is the greatest increase since records started being collected in 2003. In particular, a 10 trillion won (US\$8.93 billion) increase is unprecedented. The previous highest increase was 7.8 trillion won (US\$6.96 billion) in Oct. last year.

The amount of mortgage loans increased by 8 trillion won (US\$7.14 billion), leading the total increase in household debt. Other loans, including credit line loans, also increased by 2.1 trillion won (US\$1.88 billion). Household debt by deposit banks grew 8.7 trillion won (US\$7.77 billion), while that of non-banking depository financial institutions increased 1.4 trillion won (US\$1.25 billion).

On June 21, the central bank updated the outstanding bank loans to households along with the loans to businesses, the combined of which reached 1.3024 quadrillion (US\$1.19 trillion) as of June 15, up 104.153 trillion won (US\$94.750 billion) from the 1st day of Aug. last year when the central bank started to lower the basic rate. Among them, loans to companies stood at around 700 trillion won (US\$637 billion), with the remaining owed to households.

With interest rates remaining persistently low, bank loans have increased consistently, as shown by 8 trillion won (US\$7.2 billion) in Jan. and rose up 9 trillion won (US\$8.1 billion) in Feb.



Analysts attributed the surge in household and corporate debt to the BOK's aggressive easing efforts not to lose the growth momentum of the national economy.

In particular, the surge in household loans resulted from lowered interest rates and deregulation for real estate loans, as well as an increase in loans to small and mid-sized companies owing to technology financing.

The central bank has dropped the key rate to 1.5 percentage points from 2.5 percentage point through four rate cuts since August last year. In particular, the central bank cut the benchmark interest rate to a record low of 1.5 percent, from 1.75 percent earlier this month, to counter the negative effects of the Middle East Respiratory Syndrome (MERS) outbreak on May 20.

Market watchers expressed worries over the rapid increase in household and corporate loans, saying that possible defaults in households or businesses could pose a shock to the financial market.


The government has decided to come up with measures next month to effectively control rising household debt. It thinks, however, that the increase of households

will not lead to a break-out of crisis for now, and is trying to secure a qualitative improvement instead of regulating the total quantity.

In the meantime, the household savings grew at the slowest pace in 2015 in almost eight years after the 2007 financial crisis, amid low interest rates.

Household deposits at banks stood at 547.74 trillion won (US\$494 billion) at the end of April, up 5.1 percent, or 26.55 trillion won (US\$24.16 billion), from a year earlier.

Savings deposits, which earn interest during a relatively long period of deposit, stood at 492 trillion won (US\$448 billion), up 3.8 percent during the same period, marking the lowest since Sept. 2008 when the comparable figure was a 1 percent increase year-on-year.

In contrast, demand deposits, on which banks usually pay no interest, surged 18.1 percent year-on-year to reach 55.69 trillion won (US\$50.68 billion) in April, indicating that low interest rates forced bank customers to manage their money on a short-term basis and chase after other investment chances that provide higher returns. 

by Jung Suk-ye

Lots of Money

Korea Records Current Account Surplus for 38th Consecutive Month



The Bank of Korea building in downtown Seoul. The building was completed in 1912.

The Bank of Korea announced on June 12 that Korea's current account surplus for 2014 is estimated to have increased by US\$8.07 billion from a year earlier to reach a new high of US\$89.22 billion.


This can be attributed to a rapid decline in the current account deficit with regard to the Middle East, which resulted from a drop in international oil prices. According to the central bank, the deficit decreased US\$11.17 billion to US\$79.06 billion last year.

In the meantime, the current account surplus vis-à-vis the United States went up by US\$5.96 billion to US\$42.19 billion, a record high, owing mainly to the export of automobiles and steel products. That vis-à-vis China decreased by US\$540 million to US\$56.16 billion, with the import of IT devices, steel materials, and semiconductor products on the rise, while the travel balance showed some improvement. The current account deficit amounted to US\$16.31 billion with regard to Japan. The goods balance deficit fell from a year ago as the import of machinery, precision equipment, and chemical products declined.

Overseas investment by residents in Korea showed some increase during the same period. The financial account net outflow went up from US\$63.81 billion to US\$72.5 billion. By

region, the amount increased by US\$14.27 billion to US\$26.15 billion for the United States, by US\$100 million to US\$15.26 billion for China, and by US\$5.24 billion to US\$16.26 billion for the E.U., whereas it declined from US\$4.62 billion to US\$4.41 billion for Japan.

The central bank is estimating Korea's current account surplus for this year at US\$96 billion. The new records, however, are attributable to the current recession in which imports decline more rapidly than exports. The monthly exports dropped by 10.9 percent year-on-year last month, showing no upward movement at all since the beginning of this year. Both the amount and the quantity are on the decline, along with the shipments to main export destinations such as the United States and China. In addition, the continuous surplus is leading to the appreciation of the Korean currency to affect exporters' competitiveness in the global market.

Under the circumstances, the government is planning to release a plan for overseas investment promotion in the second half, which is expected to cover overseas securities investment, pension fund overseas investment, and assistance in the M&As of foreign companies. 

by Jung Suk-ye

Internet Monies

Internet-primary Banks About to Appear in Korea

Cho Jin-young On June 18, the Korean government announced its plan for the revitalization of the fintech industry, including the introduction of Internet-primary banks.

According to the plan, an Internet-primary bank's minimum required capital is 50 billion won (US\$45 million), half of that of a general commercial bank, and Internet-primary banks are not subject to business conduct regulations. In addition, an industrial capital company is allowed to own up to 50 percent of an Internet-primary bank, not 30 percent as previously planned, so that ICT companies, game companies, and e-commerce firms can have easier access to the fintech market. This reflects Financial Services Commission (FSC) Chairman Yim Jong-yong's strong will to grow the market, even at the sacrifice of bank-industrial capital separation.

One of the remaining variables is the passage of the Bank Act amendment through the National Assembly. In view of it, the FSC excluded conglomerates, which are subject to cross-shareholding restrictions according to the Fair Trade Act, from the clauses for the relaxation of bank-industrial capital separation. But nothing can be said for sure for now concerning the passage of the bill. "We are going to open the doors allowed to be opened first, rather than sticking to the revision of the law," a FSC representative explained, adding, "The revision will be able to pick up some speed if public opinion is in favor of Internet-primary banks, the first one of which is expected to show up before the end of this year."

Korea is a second mover when it comes to the fintech industry. It failed to introduce an Internet-primary bank in 2002 and 2008. This was because of the domestic financial institutions trying to maintain their vested interests, excessive regulations and the Bank Act stipulating that an industrial capital cannot own more than 4 percent of a bank. Things are expected to be different at this time, though, with the convergence between finance and IT having already become a global trend.

The key part of the plan is market growth based on deregulation. According to it, Internet-primary banks' scope of business can cover business loans, credit cards, bancassurance, derivatives brokerage, bill acceptance, and many more, so that each can find its specialty through experience. Not Basel III but Basel I is applied during the early stage of establishment for less prudential regulation, and IT companies' computing facilities can be used by the banks as well.


The financial authorities are planning to grant the first approval to consortia of financial and fintech companies, which have



Financial Services Commission Chairman Yim Jong-yong at the 5th Financial Reform Committee meeting in Seoul on June 18.

nothing to do with the revision of the Bank Act. Then the banks can start their businesses this year. The authorities recently disclosed its evaluation criteria, including unique business models, contribution to the development of the industry, and the likelihood of overseas businesses. "Banks are not desirable," said Do Kyu-sang, head of the Financial Service Bureau of the FSC, implying that the agency was paying more attention to consortia of IT firms and non-banking players than those where banks are the largest shareholders. This seems to be based on its determination that the latter is less innovative. In the non-banking sector, Kyobo Securities, OK Savings Bank, multiple securities companies, and the like are said to be interested in Internet-primary banking.

The application for preliminary approval is scheduled to start in Sept. Interpark, Naver, and Daum Kakao, which are already running tasks for new businesses, are predicted to move, while monitoring how the Bank Act is handled. Naver is currently maintaining a neutral stance.

In the meantime, telecoms operators and distributors associated with conglomerates with total assets of at least 5 trillion won (US\$4.5 billion), such as SK Telecom, KT, Homeplus, and Emart, have lost their opportunity to participate in Internet-primary banking, although some of them still have a chance to persuade lawmakers. 

by Jung Suk-ye



New Regulations

Price Limit Adjusted to 2x Larger in KOSPI, KOSDAQ

The daily price limit on the Korean stock market has been changed from 15 percent to 30 percent from June 15. The new price limit is applied to stock certificates, depository receipts, exchanged-traded funds (ETFs), exchange-traded notes (ETN), and beneficiary certificates in the KOSPI and KOSDAQ, whereas the 15 percent rule remains on the KONEX.

The Korea Exchange introduced various means in order to prevent side effects. For example, trading of a stock is halted for two minutes when its execution price goes up or down by 3 percent or more, or its price goes up or down by at least 10 percent compared to the previous single price. Also, a circuit breaker can be implemented more than twice a day and in three stages, that is, when the index drops by 8 percent, 15 percent, or 20 percent. During the first two stages, all trading is stopped for 20 minutes, and single-price trading for 10 minutes. Even late trading is halted for the session when the third stage is brought into effect.

When it comes to the KOSPI 200, Star Index, Sector Index Futures, and KOSPI 200 Option, the three-stage rule is applied five minutes after the upper or lower limit is reached. The three stages of 30 percent, 45 percent, and 60 percent are put into place for the Volatility Index Futures, while the percentages are 10 percent, 20 percent, and 30 percent for stock futures and stock options.

Under the circumstances, securities companies recently modified their maintenance requirement ratios of collateral, reversing trade quantity calculation methods, etc. In addition, they are

expected to raise their margin requirement ratios for stocks with higher downside risks.

The Korean stock market remained bearish on June 15, the first day to which the new price limit was applied.

The Korea Composite Stock Price Index (KOSPI) fell to 2,042.32 points, losing 9.85 points from the previous session, to continue to decline for two sessions in a row, amid concerns over the spread of the Middle East respiratory syndrome coronavirus (MERS-CoV) and a Greek default. Investors were also wary of the new price limit, and the trading volume decreased by more than 78.11 million shares to approximately 310.13 million.

Foreign investors recorded net purchases of 122.5 billion won (US\$109.5 million), whereas institutional investors recorded a net selling of 138.2 billion won (US\$123.5 million). Individual investors sold their shares in the early stages, before veering to a net purchase of 14.3 billion won (US\$12.8 million) in the afternoon session.

Samsung Electronics failed to continue its upward movement, while Cheil Industries lost more than 7 percent due to the possibility that its merger with Samsung C&T could founder.

The Korea Securities Dealers Automated Quotations (KOSDAQ) lost 6.55 points from the previous session, to close at 705.85. The won-dollar exchange rate, in the meantime, rose by 2.6 won from the previous day to close at 1,117.3 won per U.S. dollar. ^{FX}

by Jung Suk-ye


Improving Asset Quality KAMCO Gives Kazakhstan Advice on NPL Disposal



The Korea Asset Management Corporation (KAMCO) held a policy advisory meeting on June 16 and 17 at the central bank of Kazakhstan. A part of the Knowledge Sharing Program led by the Ministry of Strategy & Finance of Korea, the conference was to improve Kazakhstani banks' asset quality and strengthen the financial market of Kazakhstan by means of non-performing loan disposal.

KAMCO had signed an MOU with the central bank to that end in January this year and conducted related research for six months. At the conference, the outcome of the research on how to deal with distressed debts was shared with the central bank and its arm serving the purpose, the Fund of Problem Loans (FPL).

Specifically, KAMCO mentioned the restructuring of insolvent financial institutions, expansion of the scope of debt under-taking by the FPL, establishment of a bad debt evaluation system using statistical data on court auctions, real estate prices, and the enactment of laws for financial market restructuring.

"By taking the opportunity, we could share our know-how and experience regarding the disposal of non-performing loans in Kazakhstan that have increased rapidly since the financial crisis of 2008," said KAMCO director Lee Jong-jin. 

by Jung Suk-ye

Energy Storage Samsung SDI Unveils All-in-One Home ESS for EU Market

Samsung SDI announced on June 9 that it will showcase their latest energy storage system (ESS) products at the Intersolar 2015, the largest solar and ESS exhibition in the world, being held




in Munich, Germany, from June 10 to 12.

In the event, the company will unveil its new 8.0kWh All-in-One product. The All-in-One home ESS has been customized for some European countries such as Germany and Austria, where residential houses receive electricity from three different power plants.

Since one ESS can connect to three different power lines at the same time, it is more efficient. Compared with other companies' products that use the same technology, the company has raised price competitiveness while reducing its size by more than 30 percent, using high-capacity batteries.

Samsung SDI will also unveil other new products with the same size but different capacities such as 5.5kWh ESS with 50 percent more storage, and 7.2kWh ESS, which storage capacity can be expanded to 10.8kWh any time the customer wants.

In June last year, Samsung SDI released the All-in-One home ESS for the first time as a battery maker, and started selling the product in Germany, the U.K., and Australia where the home ESS market is strong.

When a customer purchases the All-in-One product, it can be installed without any additional purchase of parts. Therefore, it can cut down costs and lessen concerns over aftercare, said Samsung SDI. 

by Lee Song-hoon

Construction Daewoo E&C Exports BMC Technology to Vietnam

Daewoo E&C signed a contract to use its own BMC technology in Vietin Bank Tower in Vietnam. The tower will be the highest building in Vietnam with 68 floors and 363 meters in height. Under a US\$200,000 (221.1 million won) deal, the company will provide simulation, construction alternatives, and precise sensor measurement for precise construction.

A research engineer from Daewoo E&C said, "Turner of the U.S., supervisor of the construction, and its constructor Hoa Bihn Construction acknowledge that our technology is superi-



An artist's rendition of Vietnam's Vietin Bank Tower, which will be used in the BMC technology of Daewoo E&C.

or to existing technology. It is meaningful because Korea opened up the skyscraper engineering market, which had been dominated by companies in advanced countries including the U.S. and Europe, for the first time. In the past five years, Daewoo E&C had applied the technology in constructing high-rise buildings, such as Northeast Asia Trade Tower in Songdo, KLCC Tower and IB Tower in Malaysia.

An official from Daewoo E&C said, "The technology will be used in Saudi Arabia's

Kingdom Tower with 1,000 meters in height, which is the highest in the world. Also, the company is seeking export to Mexico and Malaysia." **SK** by Jung Min-hee

Trains Everywhere

Korail Exports Second-hand Diesel Locomotives to Pakistan



These trains, which were exported to Pakistan by Korail after repairs, are on trial runs before being used commercially at the end of this month.

The Korea Railroad Corporation (Korail) announced on June 23 that it has successfully completed a contract with the Pakistani National Logistics Cell (NLC), which was signed in July 2012, to repair and export second-hand diesel locomotives.

The national railroad operator has delivered 10 used trains to Pakistani NLC and is accelerating finishing work, including trial runs, before being used commercially at the end of this month.

In particular, this is the first time to export Korean trains after changing its railway's standard gauge of 1.435 meters to the broad gauge of 1.676 meters. Korail successfully completed the remodeling over a period of six months and delivered the 10 second-hand locomotives by Nov. 2013.

Since then, the railroad operator spent a year changing the

equipment so that it meets the conditions of rail services in Pakistan. Also, it has trained locomotive engineers and tested operations, facing historic commercial operations.

Starting with the export of the used trains, Korail will export its advanced maintenance techniques for diesel locomotives to Pakistani railways for the next two years as its maintenance consulting services. Also, it is expected to play a role as a catalyst for additional railroad operation businesses.

Besides the used train export business last year, Korail has generated approximately 18.2 billion won (US\$16.47 million) in sales by winning urban railway improvement projects in Manila, Philippines, providing railway consulting services in Tanzania and Bangladesh, and running customized training programs in the railroad related sector in Russia and Kazakhstan.

Based on such results, Korail is positively seeking business advances in railway operation and maintenance in the Philippines and Vietnam. **SK**

by Jung Min-hee

Foreign & Domestic

GS E&C Wins 2 Deals to Build Plants, Infrastructure



GS E&C Infrastructure Division Executive Vice President Oh Doo-hwan poses with Singapore's LTA Deputy Chief Executive Chua Chong Khien at the Singapore's T3008 project signing ceremony at the Singapore LTA office held on June 19.

GS Engineering & Construction announced on June 22 that it has won two contracts to build a plant and infrastructure at home and abroad, respectively. The deals amount to a total of 667.6 billion won (US\$606.74 million).

The 311.3 billion won (US\$282.92 million)


domestic project is ONE-Project, which was ordered by Korea Petrochemical Ind. Co., Ltd., to build additional petrochemical plants in its plant in Ulsan City with a construction period of 22 months.

The overseas deal that GS E&C has won is a US\$320 million (356.3 billion won) T3008 project that has been ordered by Singapore's Land Transport Authority (LTA).

The project is to involve in the groundwork for the depot to be built on the 43 km long Thomson-East Coast Line which connects Woodlands, northern Singapore, and Changi Airport. GS E&C will have sole responsibility for the project, and the construction will be completed by March 2018 within 33 months.

Meanwhile, GS E&C has received the highest "Star" rating in the Green & Gracious Builder Scheme (GGBS) conducted by Singapore's LTA in May, and also received additional points to

win the deal.

GS E&C has won and is building a total of five projects ordered by Singapore's LTA, including four projects in the Downtown Line of the subway construction started in 2009 and 2011, and a Thomson Line project in 2013, which is worth 1.5 trillion won (US\$1.36 billion). With the contract this time, the company has won a total of six deals for subway construction alone in Singapore, being recognized for its technology in the infrastructure sector. 

by Jung Min-hee

Integrated Video Streaming

LG U+ Launches New LTE Video Portal and Smart Home System



LG U+ Vice Chairman Lee Sang-chul (right) promotes the company's new long-term evolution video portal service alongside Korean singer B.O.A (left) during a press conference at the LG U+ headquarters in Yongsan, central Seoul, on June 29.

During a press conference at the LG U+ headquarters in Yongsan, central Seoul, on June 29, LG U+ Vice Chairman Lee Sang-chul has unveiled an integrated video streaming service named "LTE Video Portal" and an IoT-based smart home solution called "IoT@Home," saying, "Until now, LG U+ has led the market with the company's long-term evolution (LTE) services. From now on, however, the company will lead it with its new LTE video portal service and Internet of Thing (IoT) service." Also, he showed the company's ambitious goal to seek to be the number 1 company in the global IoT market within five years."


The center of its future strategy is "Me-Centric." It means that the company will provide more user-centric services rather than mobile carrier oriented services. In this context, LG U+ also introduced its new LTE service called "LTE ME" on the same day. The company said that the LTE Video Portal and the IoT@Home are the first signal seeking "Me-Centric."

The LTE Video Portal is the service that allows users to watch all the video contents across the world at one place at once. It combines the existing mobile IPTV service U+HDTV, the Uflix Movie and the "Premium Knowledge Pack." The service provides a portal-style interface that users can search from more than

130,000 video-on-demand contents including user-created contents from YouTube.

Lee said, "If Google is sea water of video contents, we will realize the Me-Centric by dividing and offering them in the way users want, such as lake water, stream and spring water."

LG U+ has also launched a free additional data service called "Subway Video Free." In addition to 1GB of data a day for video streaming provided by its video data usage-based billing plans, the company will offer an additional 1GB of data at no extra cost when using it on a subway. After the release of data-based billing plans last month, the move follows its competitors' successful launch of the plans – SK Telecom's Band Time Free and KT's My Time Plan, in which subscribers can use unlimited data when they want.

From the next month, the company plans to introduce six new home IoT-based services such as light switches, power outlets, energy meters, heating and cooling control, opening detection sensors and door locks. With the company's smart home solution Z-wave, LG U+ has also released a dongle-type "IoT Herb" device, which connects the wireless network to various home appliances, and a smartphone control app "IoT@Home" for its home IoT platform. 

by Cho Jin-young

Coin-Sized Energy Source

LG Chem Develops World's First Hexagonal Battery



An LG Chem model poses with the firm's hexagonal battery and a 500 won coin, to show the relative size.

LG Chem said on June 28 that it has developed a hexagonal battery targeting the global smartwatch market.

In the current climate of global IT manufacturers developing circular smartwatches, the hexagon-shaped batteries cannot but be more competitive in energy efficiency. The hexagonal battery enjoys 25 percent higher energy efficiency than conventional rectangular batteries, increasing battery life by up to 4 hours.


"The company has cooperated with a business partner to develop the batteries for smartphones, but we cannot disclose the name of the company due to a non-disclosure agreement," LG Chem said, hinting that Apple and LG Electronics are not partners

in the battery's development.

LG Chem will mass produce and start to sell hexagonal batteries to global smartphone manufacturers. The company's battery facilities in Nanjing, China, are known to be responsible for manufacturing the hexagonal batteries.

According to research firm Gartner, smartwatches will make up at least 40 percent of wearable devices by 2016, and more than 100 million smartwatches are expected to be released in 2020.

Besides the hexagonal battery, LG has developed "curved," "recessed," and "wired" batteries based on its patented "Stack and Folding" technology. The company calls such a variety of batteries "Free Form Batteries." An official at LG Chem expected the demand for battery products that allow various designs of devices to explosively increase in the coming years.

LG Chem plans to introduce more batteries of various shapes, including an L-shaped one or a rectangular model with a hole in the middle.  by Jung Min-hee

Trimming The Fat Samsung Electromechanics to Pull Out of HDD Business



Samsung Electromechanics will pull out of the hard disk drive (HDD) business to concentrate on core businesses, because the HDD business has suffered chronic deficits.

The company announced on June 26 that it has decided to stop manufacturing and selling HDD motors, explaining that the decision was made because the market environment has sharply deteriorated, with the continuous decline of demands despite its self-rescuing efforts. The decision comes a month after it said it would contemplate exiting non-core sectors.


Samsung Electromechanics is withdrawing from the business three years after the company bought Japanese company Alphana Technology for 150 billion won (US\$133 million) in 2012.

One of the major reasons that Samsung Electromechanics pulled out of the HDD business was that the market demand shifted quickly to solid state drives (SSDs), which dominate the laptop and desktop market, putting the HDD business performance into a sharp drop.

The company's accumulated deficits since buying the Japanese company reportedly reached 160 billion won (US\$142.5 million) in the motor business alone. The HDD division reported 370 billion won (US\$330 million) in sales, with a 170 billion won (US\$151 million) operating loss last year.

The restructuring comes mainly from the slow camera module business, one of the firm's core businesses, as Samsung Elec-

tronics' new flagship smartphones, the Galaxy S6 and S6 Edge, showed sluggish sales. The company's total operating profits also plunged to 1.7 billion won (US\$1.5 million) last year from 464.0 billion won (US\$413 million) in 2013, with sales of 7.14 trillion won (US\$6.36 billion), down 13 percent from a year ago.

In the meantime, the Samsung Group has pulled out of non-essential or low-growth units. At the end of last year, Samsung Electronics sold its fiber optics business and reduced its light-emitting diode (LED) business. Samsung Group also decided to sell its chemical and defense businesses to the Hanwha Group. 

by Jung Min-hee

Energy Management OCI Joins Hands with Oxford to Integrate Solar, ESS Techs

OCI has set out to secure a core technology to target the solar power energy storage systems (ESS) integrated market, which combines microgrid-based distributed solar power and ESS.




The company announced on June 25 that it will work on an industrial cooperative project to develop the decentralized Energy Management System (dEMS) for small decentralized solar power generation by Oct. 2017 in cooperation with the University of Oxford of the U.K. and Hanyang University. A microgrid is a self-sufficient small-scale smart grid system that brings electricity to small areas and can operate independently. It is considered to be a next-generation power system that combines renewable energy sources, including solar power and the ESS.

The leading institution OCI will direct the national research project. The company is to provide its self-developed 20kWh Vanadium Redox Flow Battery (VRFB) ESS and a solar power generation system.

For the participating institutions, the University of Oxford will develop the microgrid power control system, while Hanyang University will improve the efficiency of the power control system by analyzing the electrochemical properties of a redox flow battery.

OCI Vice President Kim Taek-joong said, "Through the research project, we expect to develop a microgrid power control system by using Oxford's technologies to predict solar power production and optimize the system. Then, the company will secure its competitive edge, since we are able to establish solar power plants using a controller to efficiently control electric supply."

Meanwhile, the global new renewable energy market research institution Navigant Research forecast that the size of the global ESS market for microgrids will rapidly grow from 1100MW worth US\$765 million (850.14 billion won) in 2015 to 9760MW worth US\$3.13 billion (3.48 trillion won) in 2022. 

by Jung Min-hee

Boeing Customer

Korean Air to Buy 100 Next-gen Aircraft



Hanjin Group Chairman Cho Yang-ho (2nd from left) and Boeing Commercial Airplanes CEO Ray Conner (3rd from left) pose together after signing an MOU for the purchase of 50 B737MAX-8 aircraft.

Korean Air has decided to introduce the largest-ever number of aircraft for a domestic carrier, gaining a foothold for a new leap, along with the 50th anniversary of its establishment in 2019.


Attended by Chairman Cho Yang-ho of the Hanjin Group, the parent group of Korean Air, Hanjin KAL Executive Vice President Cho Won-tae, Boeing Commercial Airplanes CEO Ray Conner, and Airbus CEO Fabrice Bregier, Korean Air signed a memorandum of understanding (MOU) at the Paris Air Show for the purchase of a total of 100 next-gen aircraft on June 16 (local time). The company also signed an MOU with Pratt & Whitney for the PW1100G-JM engines that will be installed in the new Airbus planes.

Under the MOUs, Korean Air will buy a total of 100 next-gen aircraft – 50 B737MAX-8 aircraft (30 confirmed and 20 optional purchases) from Boeing and 50 A321NEO aircraft (30 confirmed and 20 optional purchases) from Airbus. Also, the carrier decided to buy two more B777-300ER planes.

This is the first time for a Korean carrier to buy such a large number of aircraft at one time. Korean Air will spend about US\$12.23 billion (13 trillion won) on the deals based on its market prices. Also, the aircraft will be introduced gradually from 2019 to 2025. Some of them will replace the carrier's old B737NG planes, while the rest will cope with growing demand.

The B737MAX-8 is a next-gen environmentally-friendly aircraft that maximizes efficiency, reliability, and operational ability with advanced technology such as the newest CFM International LEAP-1B engine and winglets, which can cut down fuel costs by

1.8 percent compared to existing wings. Accordingly, it helps carriers save fuel costs by more than 20 percent and operational costs per seat by 8 percent.

With the latest engine and technology, the A321NEO is another next-gen eco-friendly aircraft that consumes 15 percent less fuel than older, similar-sized aircraft and emits less carbon. The maintenance cost is also lower.  by Jung Min-hee

Full-Service Banking

Hana Opens Nation's First PB Center for Chinese Customers



Hana Financial Group Chairman Kim Jung-tai (center) and Lancy Group Vice Chairman Shin Sang-kuk (4th from right) cut a ribbon during the launching ceremony for the International Private Banking Center held in Yeoksam-dong, Seoul, on June 18.


Hana Financial Group (Chairman Kim Jung-tai) announced that it has opened the International Private Banking Center (IPC) focusing on Chinese customers in Yeoksam-dong, southern Seoul. It is the first bank in the nation to do so.

The IPC offers a full line of personal and business banking products and services at home and abroad, combining the networks of Hana Bank's private banking (PB) centers, Korea Exchange Bank's Foreign Direct Investment (FDI) Centers, Hana Daetoo Securities' Investment Bank (IB), and its China Corporation Limited.

If you are a Chinese customer visiting the IPC, you will be provided materials on products written in Chinese and consultation with private bankers who can speak Chinese.

The group plans to attract funds from Chinese customers by providing not only asset management services through the investment in real estate, stock, funds, and bonds, but also information services about domestic companies' sales, investment, tax, and law.

It will also provide tourism services and information about cultural events. In opening the IPC, the Hana Financial Group put efforts into securing the most professional workforce. In fact, its employees working at the IPC are Chinese experts who have years of work experience in its local subsidiary in China and business finance sector after taking MBA courses in China.

Starting with the first IPC in southern Seoul, the Hana Financial Group plans to open other centers in Jeju Island, Busan, Incheon, Shanghai, Beijing, Hong Kong, New York, and Canada, completing its global network within this year.  by Jung Suk-ye

Things on Internet

KT Gearing up to Start Internet of Small Things Business

KT announced on May 31 that its President Hwang Chang-kyu visited Nokia and Ericsson from May 28 to 29 (local time) and agreed to go into partnership for 5G tech.

KT's president is actively working to provide the Internet of Small Things service, accelerating preparations for related businesses. Hence, the industry is paying attention to whether or not KT will be able to make the Internet of Small Things business, which is specialized for quickly sending a small amount of data from electricity meters and health-related information, a future growth market.

According to industry sources on May 31, KT President Hwang Chang-kyu discussed cooperative measures for the ICT sector including the Internet of Small Things industry in a meeting with Axelle Lemaire, minister of state for digital technology, in Paris on May 27 (local time).

KT's president and the French minister reportedly discussed ways for the penetration of French company SigFox into Korea.

SigFox is receiving a lot of attention in the global communications industry, since it suggested the notion of the Internet of Small Things for the first time. In the past, the French company increased the response speed and stability for small-scale data transmission using unlicensed frequency bands. On top of that, it successfully commercialized much cheaper networks for the Internet of Small Things

for the first time. SigFox explained that 8 million devices worldwide are connected to networks for the Internet of Small Things.

The French government is focusing on research and development in the IoT area and the cultivation of start-ups with an aim to take back its dominant position in the ICT market in line with its "Industriel" plan. The government is providing full support to SigFox under the strategy for global ICT market penetration. SigFox also recently discussed cooperative measures for the ICT sector with Samsung Electronics, increasing business partnerships with German-based mobile carrier T-Mobile, and others.

Industry analysts are saying that Hwang probably asked the French government to have a meeting with the minister. In fact, a senior executive in charge of marketing at SigFox reportedly visited KT's headquarters and met high-ranking officials in May.

Following France, the KT president visited Nokia and Ericsson on May 28 and 29, and discussed ways for cooperation in 5G tech and the construction of a test-bed.

To bring the commercialization of 5G closer, Hwang reached an agreement with the representative of Nokia to strengthen

cooperation in virtualization-based Fiber to the Antenna (FTTA), a favored tech for 5G networks. Both companies also agreed on the joint development of mobile edge computing techniques to provide 5G services.

In his visit to Ericsson's headquarters, a tech jointly developed by KT and Ericsson was successfully demonstrated in a moving car for the first time. The technique is about simultaneous transmission between 5G base stations, based on broad band millimeter waves. The method will make it possible to drastically reduce blind spots by connecting a large number of small cells without interruption, thereby helping gb-level wireless services like hologram video communications go smoothly while driving.

The Korean and Swedish companies succeeded in delivering connection speeds of up to 2Gbps in a moving car in the demonstration, planning to increase the speed to more than dozens of Gbps in the future. In addition, Korea's second-largest mobile carrier signed a Memorandum of Understanding with Ericsson to develop and test LTE-M and IoT-related methods.

by Cho Jin-young

Vertical IoT

Samsung One Step Closer to Vertical Integration of IoT



Samsung Electronics is building a strategic cooperative network linking South Korea, the U.S., and Europe in order to enhance its competence in the Internet of Things (IoT) sector.

Samsung said that it concluded an equity investment contract with Sigfox, a venture company that develops IoT-related equipment and technologies, in Paris on June 15. Samsung did not disclose the scale of the investment, however. Samsung acquired SmartThings, a software company in the U.S., for US\$200 million. As a result, a division has been developed where Samsung Electronics manufactures electronic equipment, SmartThings produces software, and Sigfox develops communication networks.

Sigfox is famous for developing the “Internet of Small Things,” a subordinate sector of the IoT. The “Internet of Small Things” enables the fast exchange of small data with simple communication facilities without a high speed network such as LTE. The company also developed

a technology that reduces the cost of base station construction and power consumption.

Last Feb., U.S.-based Intel, Telefonika of Spain, and South Korea’s SK Telecom invested US\$115 million in total, which was the largest investment received among French venture companies.


Samsung Electronics has developed an IoT cluster which links South Korea, the U.S., and Europe with its new investment. For example, when the company produces smartphones, TVs, electronic sensors and chips, it can apply Sigfox’s communication technology. These products, then, operate in association with each other via the SmartThings software platform. Such vertical integration of terminal, communication technology, and platform is not common.

The market is expected to rapidly expand. According to Gartner and IDC, the number of devices connected to the communication network will be 25 billion, and is expected to become more than 50

billion in 2020. At the time, every device will communicate with every other device.

This year, Samsung Electronics plans to invest US\$100 million to support IoT developers. It plans to connect TV in 2017, and all of its products including washing machines, air conditioners, and refrigerators, so that they can be managed and controlled.

Of the U.S., Google and Apple announced their operating system (OS) for IoT, Brillo and HomeKit respectively. Google’s Brillo enables smartphones, including low-end ones, to control household appliances. Apple’s HomeKit can be installed in not only smartphones, but also the Apple Watch and other wearable equipment, so that the user can control connected equipment with the voice.

South Korea’s SK Telecom and Sweden’s Ericsson have concluded an agreement to cooperate in research and development of next generation IoT technology too. 

by Cho Jin-young



Giga Competition

KT Set to Commercialize Giga-LTE Services

Korea's major telecommunication service company KT said on June 16 that it is set to commercialize the world's fastest mobile network, called Giga-LTE, which combines the current Long Term Evolution networks with Wi-Fi connections. The new technology offers gigabyte speeds to users, taking a step closer to a next-generation 5G network.

The new network service realizes a peak speed of 1.17 Gbps - 15 times faster than existing LTE and four times faster than the tri-band LTE-Advanced, which is the latest 4G technology that has combined three different frequencies and fastest wireless networking methods currently available in Korea.

KT said users would be able to download an 18 GB ultra high-definition (UHD) movie in about 126 seconds and 100 music files that amount to about 3 GBs within 21 seconds. It took at least 28 seconds for existing 3-band LTE-Advanced and 38 seconds for the broadband LTE-Advanced to download 1 GB of data.

The new network service will first be offered to Samsung Galaxy S6 or S6 Edge users starting this week, and gradually be expanded to other smartphones. Users can upgrade their mobile network to the Giga-LTE via a free firmware upgrade.

KT has been working with Samsung

Electronics to develop the Giga-LTE service since last September.

The mobile carrier is going to open a "5G Test Bed" in July in the KT R&D center in Seoul, which will be a driving force to secure more 5G technologies and the pre-occupancy of its standardization. The company plans to provide trial service first for the Pyeongchang 2018 Winter Olympics to be held in Korea.

In the meantime, LG U+ said that it will commercialize "GIGA multi pass," which provides up to 1.17 Gbps of speed, by combining LTE and Wi-Fi. The company also plans to double the speed this year, so that it will transmit data with a speed of over 2Gbps, the company said on June 21.

Theoretically, a 2 Gbps connection would allow users to download an HD movie, about 1.4 GB of data, in six seconds, or a UHD movie, about 18 Gb of data, in one minute and 12 seconds, the company said.

In the case of sound sources (about 5 Mb), about 50 songs can be downloaded in one second, the company said.


The company will complete testing of "downlink 256 qam technology," which increases the LTE speed by 30 percent, this month. And it plans to commercialize it by the third quarter, the company said. When this technology is applied to the 3-band CA service, the download speed

can be increased up to 390Mbps, the company said.

The company also plans to include 4x4 MIMO technology in the Wi-Fi band, so to increase GIGA Wi-Fi service's speed. The 4x4 MIMO technology increases the number of antennas transmitting and receiving one Wi-Fi signal, so the GIGA Wi-Fi AP can transmit data to several users. This can double the GIGA Wi-Fi speed to a theoretical maximum of 866 Mbps, the company said.

The company developed large capacity IP packet exchange equipment in addition to having completed testing of a virtualized Radio Access Network, a BS virtualization technology, as a technology which enables dealing with twice the data traffic is applied on the communications network, it said.

vRAN, described as a prior 5G technology, flexibly increases base stations' traffic management capacity, which can freely control the capacity for traffic in accordance with the situation by connecting the base station and the Internet network in virtualization.

A 4 Tb L3 switch, a exchanger for massive IP packet that LG U+ co-developed with UBIQUOSS, can deliver about 3,000 HD movies simultaneously per second when it is used on a network. 

by Cho Jin-young

Speed of Thought

Korea Takes Initiative in 10x Faster 5G Mobile Telecom Services



5G mobile telecommunications services that are at least 10 times faster than existing ones are expected to be available as early as 2020.

The Ministry of Science, ICT and Future Planning (MSIP) announced on June 18 that participants agreed on the draft of the mobile telecommunications vision at the ITU-R WP 5D meeting in San Diego from June 10 to June 18 (local time). It was also decided to set 5G standards by 2020 to realize the vision.

The agreement reflects much of Korea's proposal.

The agreed notion of the 5G mobile communications system is to offer data transmission speeds of up to 20 Gbps and at least 100 Mbps in any place. The maximum transmission speeds are 20 times faster than those offered by the 4G cellular telecommunications system, and the minimum speeds are 10 times faster than currently-available 10Mbps.

An official at the MSIP explained, "The agreed minimum speeds are 100Mbps, but local mobile carriers are aiming to deliver 1Gbps," adding, "Then, people will be able to download a 10GB UHD movie within 10 seconds."

In addition, it will be possible to use virtual reality content in real time. Services using holograms or smart home and office services aimed at sharing information will also be available, since all kinds of devices will be connected to each other.

On top of that, it was decided that up to 1 million devices will be allowed to be connected within 1 km², and only a 1/1,000th of a second of transmission delay will be permitted, 10 times better than what offered by 4G tech.

Attendees also agreed to receive applications for candidate technologies from 2017 in order to commercialize 5G tech by 2020. As a result, the MSIP anticipates that it will be possible to demonstrate pilot 5G services in 2018 for the first time using a candidate technology, when the PyeongChang Olympic Winter Games is held.


The government has set a goal to commercialize 5G services in the country by 2020, when 5G standards are expected to be finalized. Through this, Seoul aims to take the initiative in standardizing 5G tech at the international level.

The decision for 5G standardization

will be made at the next ITU-R WP 5D meeting in July, and be finally approved by 193 ITU member countries in two months.

As Korea was leading the efforts to complete a report on utilizing frequency bands above 6 GHz for Wi-Fi hot spots, the nation was reportedly able to achieve international consensus on the necessity of discussing the distribution of ultra-high frequency (UHF) bands at the World Radiocommunication Conference 2019 (WRC-19).

"If frequency bands above 6 GHz are additionally used to realize 5G tech, it will be helpful in dealing with growing mobile data traffic occurring in crowded areas like subway stations or department stores," said an official at the MSIP.

IMT frequency bands will take effect once the ITU revises rules on radio waves through the WRC. The nation is planning to make an effort to put research on cultivating IMT frequency bands above 6 GHz on the agenda at the first session of the conference preparatory meeting for WRC-19 to be held from Nov. 30 to Dec. 1. 

by Cho Jin-young

Payment Market War

Local IT Giants Fighting to Capture Mobile Payment Market

According to Korea Information Society Development Institute (KISDI) on June 21, the domestic mobile payment market has shown a steady increasing trend, already exceeding 3 trillion won (US\$2.71 billion) in the first half of last year. Domestic payments have steadily increased every quarter from 1.127 trillion won (US\$1.02 billion) in the first quarter of 2013 to 2.355 trillion won (US\$2.13 billion) in the fourth quarter of the same year. Also, it posted 3.193 trillion won (US\$2.88 billion) in the second quarter of last year.

In such a market expansion, the war among large information communication technology (ICT) companies begins in the payment market.

Naver has set out a strategy to strengthen its substantial services through a synergy effect with existing services, including mobile shipping. The company will unveil Naver Pay on June 25, which allows users to pay online at a large number of small and medium sized online shopping malls with a single Naver account.

Naver Pay has joined hands with 50,000 partner stores, showing a limitless product database. Also, it is expected to be

widely used due to its access convenience enabling users to pay online with a single Naver account without any additional log-in process.

Daum Kakao first ignited the competition in the payment market by rolling out its mobile payment Kakao Pay, and it is extending its business field in a different way.

Daum Kakao already signed a memorandum of understanding with the state-run Korea Electric Power Corporation (KEPCO) and Seoul City to develop a new mobile payment system which will allow users to make local tax payments to Seoul City, and also electricity bills, residence taxes, property taxes, and auto taxes, via Kakao Talk. Also, Kakao Pay will have greater access considering the fact that the company can build a foundation in the online to offline (O2O) market with its ongoing project Kakao Taxi, that will be combined with Kakao Pay.

As the company is showing the increase in a limited number of partner stores, which was considered its weak point, Daum Kakao seems to use the simple payment system as a catalyst to promote Internet mobile banks. Currently, the company is releasing partnership ser-

vices of Kakao Pay with numerous banks, expanding the joint contact area with banks.

Samsung Electronics is set to unveil its new mobile payment system Samsung Pay in Sept. Initially, the company considered releasing the system in July, but it decided to delay the date in time for the launch of its next-gen flagship model, the Galaxy Note 5. Since Samsung Pay will introduce both magnetic secure transmission (MST) and near field communication (NFC) technologies, it can be used in almost every store.

Also, Samsung Electronics has an ambition to make an “electric wallet” that can save all credit card information in one place. Samsung Electronics Vice President Rhee In-jong said in the Samsung Electronics’ Investors Forum 2015 on June 3, “You have not only credit cards but also some franchise cards, membership cards, gift cards, coupons, and receipts in your wallet. Samsung Pay will slim your fat wallet with all those cards.”

Samsung Pay is also expected to play a role as an identification card. Using the Samsung’s security platform KNOX, it will replace an access card and an ID card.

by Cho Jin-young

There but Not

Mobile Carriers Set to Develop Tech for Huge Hologram Market

Korean mobile carriers have started to develop tech for holograms, which are expected to create a 100 trillion won (US\$90 billion) market by 2025. With an increasing demand for 3D images, related industries are likely to grow fast as well.

Since 5G networks are expected to offer 100 times faster data transmission speeds than LTE networks, it will be possible to send enough information for mobile devices to make and use holograms regularly.

According to industry sources on June 23, LG U+ is working to develop the related technology. The carrier has already developed a method that can create holographic images quickly. In fact, the research findings were featured in journals covered by the Science Citation Index (SCI), including scientific journal *Optik* and the *Journal of Information Systems and Telecommunication* (JIST).

The newly-developed technology

can make holograms very fast using less memory than existing methods by removing any redundancy in time and space. Specifically, the tech is able to reduce the amount of required memory up to 1/744th and improve speeds by 21.7 percent.

KT, on the other hand, opened a K-pop hologram performance hall called K-live in January, together with the Ministry of Science, ICT and Future Planning (MSIP) and YG Entertainment. The K-live concerts are performed by a special method to make high-resolution images show like holograms. Those concerts have been met with a very positive reaction, since people can feel as if the images are right in front of them.

In other countries, there are numerous companies developing holograms. Following HP and LEIA, Ostendo Technologies has also successfully developed a tech to make a 3D hologram projector, which enables people to see images with-

out 3D glasses. IMEC, a research center headquartered in Belgium, is gearing up to unveil 500 nm pixel pitch stationary images based on nanoscale Micro-Electro-Mechanical Systems (MEMS).

Sony is providing a combined solution encompassing screens, servers, and projection systems suitable for 4K digital cinemas. The Japanese tech firm has also developed a prototype of a holographic stereogram printer.

SeeReal already developed the world's first 20" holographic display equipment in 2007, and owns the related patents.

The global hologram market is expected to be worth about 100 trillion won (US\$90 billion) in 2025, a fivefold increase from the current level, according to the MSIP. That explains why global companies are trying hard to develop holograms. There are still no standard technologies to make holograms, though.



by Cho Jin-young



Unreal Reality

IT Industry Accelerating Move to Dominate Augmented Reality Market

IT enterprises at home and abroad are accelerating the launch of a new offensive to dominate the augmented reality (AR) market.

According to industry sources on June 8, major IT companies are buying firms that are working on AR or showcasing new products.

The size of the AR market is expected to increase from US\$500 million in 2016 to US\$120 billion in 2020, according to the Institute for Information & Communications Technology Promotion (IITP). Virtual reality (VR) shows objects and places that do not exist in reality, but AR adds virtual objects to the reality around you. Therefore, the IITP said that AR has the potential to be used in everyday life or numerous industry areas. AR technology can be used in fields like remote medical diagnosis, broadcasting, architectural design, and manufacturing process control.

The reason for foreign companies to focus on the AR market lies in its steep




growth curve. Apple acquired AR solution developer Metaio in May. Virtual reality headset maker Oculus VR, which is a Facebook subsidiary, also recently revealed its interest in AR through the purchase of Surreal Vision.

Local companies are introducing various types of services using AR as well. SKT demonstrated an AR platform named T-AR for Project Tango during Google I/O in San Francisco on May 29, planning to lead the local AR market in partnership with Google.

Venture firms also stand out from the

crowd in the AR area. Circus Company, a local AR solution developer, is providing 6 kinds of educational content using AR technology to digital textbooks for elementary and middle schools, along with the Korea Education and Research Information Service.

Social Network, another local venture firm, also signed a license agreement with Alpha Animation and Viva, China's largest and second-largest character companies, and is scheduled to showcase a 3D AR app called Sketchpop in China. 

by Cho Jin-young

Augmentations

SKT Demonstrates 3D Augmented Reality Solution in Partnership with Google



An SKT representative demonstrates an augmented reality solution called the T-AR for Project Tango and a device named Tango with a 3D sensor during Google I/O in San Francisco on May 29 (local time).


SK Telecom announced on May 31 that it demonstrated the T-AR for Project Tango, which combined an augmented

reality (AR) platform and Google's 3D motion-tracking technology and a device named Tango with a 3D sensor during Google I/O in San Francisco on May 29 (local time).

The T-AR for Project Tango is Google's next-generation core project aimed at developing a mobile platform equipped with a 3D depth sensor.

SKT teamed up with Google and developed a solution capable of displaying virtual content by analyzing and recognizing 3D space, after combining a ter-

minal called Tango that is able to recognize space with T-AR, an AR platform. Existing AR technology remains at 2D that covers videos recognized by a camera with information images, whereas Tango can deliver 3D AR through space recognition.

For example, people will be able to see dinosaurs and primitive men roaming around a museum through an AR terminal if a virtual reality Stone Age is built inside a museum using the newly-developed AR solution. 

by Cho Jin-young

Goes Good Together

LG UHD TVs Recommended by Netflix for Streaming Video Service



Visitors watching LG's 2015 UHD TV at the launch event held with Netflix at the Health Kitchen in Manhattan on April 8.

According to industry sources and LG Electronics on June 22, Netflix threw its support behind LG's 13 UHD TVs, since those models are believed to work well with its streaming video service. The number is twice or four times higher than that achieved by rival companies like Hisense, Sony, Sharp, or Panasonic. Most of all, LG's UHD TVs with webOS 2.0, an operating system (OS) for its smart TVs, are widely acknowledged to be more suitable for delivering Netflix's service.


The "Netflix Recommended TV" highlights the most suitable TVs to consumers who prefer services provided by Netflix, and it is utilized as a strict standard to review the function of smart TVs. To be recommended, televisions are required to execute the Netflix app very fast, feature a button that can execute the app, and have a function optimized for Netflix's streaming service, including the video playback function.

TV manufacturers around the world

are currently working to develop TVs with a more lightweight OS to strengthen their partnership with Netflix, which is actively seeking to distribute 4K content faster than terrestrial broadcasting companies. From the TV makers' perspective, Netflix's recommendation will lead them to the benefits of co-marketing with Netflix, which in turn will give an advantage over other companies in leading the heated 4K TV market. In addition, the clout of the largest online streaming service provider in North America will be beneficial for TV suppliers to target the North American market.

In fact, Panasonic revealed that its new 9 4K TVs scheduled to be introduced this year were included in the program in early June. Convenient search options and fast execution are considered to be the strong points of Panasonic's 4K TVs with a Firefox OS. Previously, Sony also succeeded in getting its two low-priced Android TVs recommended.

In particular, LG, which already has 13 certified TVs, is reportedly working to have all of its upcoming UHD TVs included in the program. Netflix also appears to prefer LG's UHD TVs. An official at Netflix remarked, "WebOS 2.0 featured in LG's 4K TVs is considered to be very appropriate for our streaming service," adding, "LG's 4K TVs have the most suitable elements required for Internet TVs, including an interface or a navigation system."

Samsung Electronics, on the other hand, has reportedly failed to get its TVs included in the program, which is rather exceptional, considering its top position in the global TV market. An official at a local TV maker said, "It is due to a difference in strategies rather than the functional problems of Samsung TVs," adding, "Without Netflix's recommendation, Samsung TVs have no problem in delivering Netflix's streaming service." 

by Cho Jin-young

Context, Brokers, Linkability

KBLA Seminar Spotlights Key Big Data Privacy Issues

On June 16, the Korea Business Leaders Alliance hosted a lunch seminar on the topic of “Big Data, Surveillance, and Privacy” at the Hyatt Hotel. The presenter was Rodney Johnson, president of Erudite Risk, a locally-based risk management consulting company. The seminar brought to light several important trends involved in the Internet and the business practices of large companies that impact both our professional and personal lives in many small ways such as the bulk collection of data. It also highlighted the key issues with these practices, and what they mean both for businesses and individuals.

Rodney began the presentation by emphasizing to everyone in the room, “You are leaking data.” He outlined in brief detail how much information is routinely being collected now, both by private companies and by government agencies, and why. The reasons he presented were simple: the data is worth lots of money.

One specific insight stuck out here – he showed in the presentation that more than protecting the privacy and secrecy of information, people most want to protect the context of their information. He brought up the good point that nobody cares if their doctor knows every health-related detail about their life. But, people do care if that information leaves the health care context and enters another context, like the workplace, because it could potentially have negative effects.

After the subject of secrecy, Rodney addressed the amount of data that is being collected by talking about one Max Shrem from Austria. He used E.U. privacy laws to request from Facebook every piece of information that the company had about him. He received a 1,222-page PDF from the company detailing 57 different categories of information that they had collected,




The first slide in Rodney Johnson's presentation on big data, surveillance, and privacy.

from every single notification he had ever sent out, to his political views, physical location, and credit card information.

Rodney then went on to show how much this type of data was worth to the companies that collect it. He spoke about the largely-unknown world of data brokers like Datalogix and Recorded Future, companies that buy, sell, and combine databases to create profiles on as many people as they can identify. The data broker Acxiom, for instance, advertises to potential customers that it has “profiles on 10% of the world's population and an average of 1,500 data items per profile.” And he also said that government agencies of many countries around the world participate in this data marketplace, both buying and selling information about their citizens, and even those of other countries.

He also addressed why the data is worth so much, by saying that with

enough data, companies expect to be able to reasonably predict the future. He pointed out in the presentation that while in the past companies would have to take polls of small sample sizes of the population, or work with limited amounts of data about their existing customers, with all of the data of every single person in an entire market segment, companies could make extremely well-informed decisions.

Rodney completed the presentation by saying that the increasing amounts of data available make it easier to link all the disparate bits of data together, and this “linkability” is the number one threat to privacy for the average individual. Unfortunately, it is also the Holy Grail for companies seeking to predict the future. Overall, the presentation was eye-opening to many of the businessmen in the room, and sparked a lively discussion between members of the KBLA.  by Matthew Weigand

Struggle for Control

Will Korea be Another Country to Relinquish Control of Mobile Search Engine to Google?



As more and more people are using mobile devices instead of PCs to access the Internet, Google is consolidating the runner-up position in the Korean mobile search market.

Experts are saying that Google's influence is expanding in the local mobile search market, as shown by the fact that the number of local Internet users who visited Google's homepage through mobile devices reportedly surpassed the figure for Naver. Therefore, much attention is being paid to whether or not Google's growing influence will lead to controversy over the pre-installation of apps.

According to market research firm Nielsen Korean Click and industry sources on June 2, Google comprised 10.7 percent of the local mobile search market in Dec. last year. After overtaking Daum Kakao, its share continued to grow until last April, thereby maintaining the runner-up spot for the fifth consecutive month. Google accounted for 13.9 percent of the market in the third week of May, successfully remaining in second place by beating Daum Kakao with an 11.4 percent.

Google's share amounted to 11.8 percent in Jan. this year, 14.0 percent in Feb., and 15.1 percent in March, reacing a new milestone. The search giant made up 14.6 percent of the market in April, widening the gap with Daum Kakao in the market, which had a share at the level of 11 to 12 percent.


The figure is about the traffic calculated only by mobile web visits, and thus when mobile searches through apps are included, Google's actual share is likely to be significant.

The number of people who visit google.co.kr and goolge.com via mobile devices is said to exceed that of Naver.

The web search giant's influence is still minimal in the local search market using PCs and mobile devices. However, considering the growing influence of mobile devices in Internet access, many in the industry point out that an increase in Google's share of the mobile search market is noticeable.

With Google's growing influence in the local mobile search market, industry analysts are saying that the app pre-installation controversy can come to the fore again.

In the past, there was controversy at home and abroad surrounding pre-installing apps on mobile devices using Google's market domination. However, the Korea Fair Trade Commission hasn't imposed sanctions on Google, on the grounds that its share of the local search market is low. The country's anti-trust regulator says that Google represents the vast majority of the European search market, but its share of the local market stands at merely the 10 percent level.

Nevertheless, the industry is keeping a close eye on the unfolding situation. An industry source said, "Google's share of the search market is probably much bigger than what we think," adding, "Local Internet companies should try hard to increase their shares. But we also need to pay close attention to the expansion of Google's share, which holds a dominant position in the market." 

by Cho Jin-young

Convergence

Era of Customized Manufacturing Looming Closer



A local research institute is working on a project to develop a production system aimed at bringing the era of custom-made products closer through the convergence of the ICT and manufacturing industries. The project is expected to contribute to realizing Industry 4.0 that makes products by breaking away from the existing method and reflecting consumer demand in real time.

The Electronics and Telecommunications Research Institute (ETRI) announced on June 3 that it has begun a research project to create a cyber-physical system (CPS) capable of producing products that reflect individual demand by connecting modules for small-scale production. The CPS is an integrated system between the cyber and physical worlds that makes communication between things and its automatic and intelligent control possible. The system is used for smart manufacturing, next-generation cars, national defense, smart grids, and smart transportation.

ETRI is currently working to develop a standardization framework that supports the convergence of the ICT and manufacturing industries, in addition to a reference model. Through this, the institute is planning to intellectualize the ecosystem for plants and manufacturing including products, manufacturing processes, and production by applying ICT to the manufacturing industry, thereby providing a base model for the ICT-manufacturing industry and a standardization roadmap.

The research institute aims to establish a foundation that produces customized products by applying software-centered automation and intellectualization technology to the manufacturing industry, going beyond the existing manufacturing process in which machines are controlled by people. ETRI anticipates that the construction of manufacturing technology and production lines that reflect consumer demand in real time will be made possible. It also expects that the era of custom-made products will start as a result. For

example, it will be possible to design and manufacture auto frames, engines, and car sheets in line with individual preferences, as well as customized cosmetics in accordance with individual skin conditions and tastes.

ETRI plans to complete base technology in three years, transfer manufacturing technology to industrial automation and software companies, and finish the commercialization of the technology. The institutes are also going to virtualize products and manufacturing process by making CPS technology sophisticated to the extent that it is suitable for the manufacturing industry. After that, ETRI is planning to further develop modeling and simulation technology that enables the virtual creation of products and factories.

Currently, ETRI is conducting a joint research project to develop core technology in partnership with Fraunhofer, Europe's largest application-oriented research organization based in Germany. 

by Jung Suk-ye

Discouraging Signs

Samsung's GPU Production to Take Longer than Expected



Samsung Electronics' production of a graphics processing unit (GPU) will be delayed at least five years.

According to industry sources on June 16, Samsung Electronics has signed a long-term license agreement with ARM to use their latest GPU and their next-generation GPU. The company has secured the rights to use the Mali-T820, Mali-T830, T860, and T880, which were designed by ARM. Considering the fact that it is a long-term contract of around five years and the company invested a large amount of money in the agreement, it has now become unclear whether Samsung will release its own GPU, which was thought to be coming out soon.

Samsung Electronics' System LSI division has been actively assembling a research and development workforce for GPUs since 2011. The company has directly attracted GPU circuit designers and engineers from overseas semiconduc-

tor companies, and has continuously hired employees with a doctorate and work experience in the relevant sector, focusing on the self-development of the GPU. Industry sources have expected that Samsung's efforts would see results this year with the release of its own GPU.

However, releasing a GPU is unlikely to be possible for a while, as Samsung Electronics has signed a license agreement with ARM again.

From the perspective of Samsung Electronics, the company chose stability over adventure, as the GPUs of its competitors like Qualcomm's Adreno and Imagination Technology's Power VR equipped in the Apple A series are improving in performance and power efficiency every year.

Son Jae-cheol, vice president of the SoC Processor Development Team at Samsung Electronics, said, "Image quality is a very important factor in pre-

mium mobile devices. Being provided with ARM's Mali series, which has high expandability and energy efficiency, we will release devices that fit various product groups."

Meanwhile, a contract for new GPU foundries with NVIDIA, which was expected to strengthen the GPU capabilities of Samsung Electronics, is also likely to decrease in terms of volume. Previously, major foreign press said that NVIDIA will decrease its next-generation GPU foundry supply to Samsung Electronics and return to TSMC, contrary to earlier expectations.

According to an insider of Samsung, NVIDIA has laid out a certain level of yield rate related to 14 nm GPU foundry production as a condition of a provisional contract to Samsung Electronics, and the negotiation is proceeding with difficulty.

✎

by Cho Jin-young

Battery War

Competition in Global Battery Market Heating Up

Tesla, a leader in the global electric vehicle (EV) industry, is building large-scale lithium-ion battery manufacturing facilities in Nevada with Panasonic. The plant is put into operation next year and its annual production capacity is to be increased to 50 GW in 2020. In the meantime, LG Chem and Samsung SDI are also gearing up, and their competition is expected to take shape within a few years.

In fact, their rivalry is already heating up in the home battery market. LG Chem announced on April 22 this year that it would release batteries for home use with Eguana Technologies. The two companies are going to develop less expensive home batteries allowing easy installation and launch them in North America in the third quarter of this year.

On April 30, Tesla unveiled its first home battery, the Powerwall. The wall-mounted battery can store up to 10 kW of energy and is priced at approximately 4.4 million won, including the installation cost. It is said that Tesla obtained more than 38,000 pre-orders just a week before the release date.

The global home battery market is predicted to grow from 430 billion won (US\$388 million) to 3.5 trillion won (US\$3.2 billion) in size between this year and 2020. Battery manufacturers are focusing on huge growth potential, although it is still a small market.

In the meantime, Korean companies are trying to solidify their dominance in the EV battery market. LG Chem, which has supplied about 400,000 batteries to GM, Renault, Ford, Volkswagen, Audi, Daimler, and many more, is predicting that the competition will become much more intense next year, with the growth of the global green car market accelerated based on tighter exhaust emissions and fuel economy regulations. The battery




Samsung SDI unveiled the world's first flexible battery in Oct. 2014.

division of LG Chem is aiming to record 3.15 trillion won (US\$2.84 billion) in sales this year to post year-on-year growth of at least 10 percent. In this context, it is planning to build battery manufacturing facilities with an annual capacity of 100,000 units in Nanjing, China.

Samsung SDI's EV battery factory in Xi'an, which has an annual capacity of at least 40,000 units, is scheduled to be opened in the second half of this year. SK Innovation, which is currently expanding its plant in Seosan, South Chungcheong Province from 300 MWh to 700 MWh, is planning to form more partnerships based on those with Hyundai Motor, Beijing Automotive, and Daimler Groups.

LG Chem has a high level of cost competitiveness in that it is the only chemistry-based company among major battery manufacturers. It has successfully worked on safer separation membranes, stack & folding techniques for higher energy density, pouch-shaped batteries adaptable to various vehicles and providing a long service life, and other refinements.

Samsung SDI acquired the EV battery pack business unit of Magna Steyr in February this year. The idea is to better penetrate the European and North American markets by adding Magna Steyr's capabilities to its competitive edge in the battery cell and module segments. Samsung SDI has recorded the highest share in the global small-sized secondary battery market for five years in a row. Now, it is expanding the scope of its business to cover electric tools, electric bicycles, and the like to find new markets. It unveiled the world's first flexible battery last year, which is expected to be used in a variety of wearable gadgets.

According to market research firm B3, Korean companies including LG Chem and Samsung SDI accounted for 49.5 percent of the global EV battery market in 2014, while Japanese companies used to represent more than 80 percent of the market until as recently as 2011. Last year, the former outperformed the latter, for the first time ever, by a margin of 0.6 percentage points. 

by Jung Min-hee

Rolling Down

Korean Automobile Companies Face Tough Challenge

Korea's automobile exports declined for five months in a row due mainly to the weak yen and recession in emerging economies. Besides, Korean automakers' domestic sales remained in the doldrums last month to signal a bumpy road ahead of them.


The Ministry of Trade, Industry & Energy announced on June 7 that the export volume decreased by 3.1 percent year-on-year to 246,093 cars in May. The rate of decrease had been 3.3 percent, 14.7 percent, 3.3 percent, and 6.0 percent in the first four months of this year.

Compared to the same period last year, Kia Motors' and Hyundai Motor Company's export volumes fell by 9.2 percent and 7.0 percent, respectively. The percentage amounted to 40.7 percent for Ssangyong Motors, which is highly dependent on the Russian market. This significantly affected auto parts exports



as well, pulling down the volume by 13.7 percent.

Korean automakers failed to make a breakthrough in the domestic market, too. Last month, a total of 140,538 cars were sold in Korea to show a 2.3 percent sales growth from a year earlier. Howev-

er, Korean automakers' combined sales volume totaled 119,949, showing little change compared to May 2014. Meanwhile, the others sold 20,589 cars to record a 17.8 percent growth from a year ago. 

by Marie Kim

Rolling Euro

Sales of Imported Cars Recovered in May




The Korea Automobile Importers & Distributors Association announced on June 4 that a total of 18,386 new

imported cars were registered in Korea last month, to show a 1.0 percent increase from a month ago and 20.1 percent growth compared to the same period last year. It added that the cumulative number for this year reached 95,557 by recording a 25.0 percent growth from a year earlier. Under the circumstances, non-Korean automakers are predicted to record a share of at least 18 percent in the Korean car market by the end of this year.

By brand, BMW showed an excellent monthly performance. Last month, BMW Korea sold no less than 4,649 cars, the highest imported car sales volume ever on a monthly basis. It was followed by Mer-

cedes Benz, whose monthly sales volume fell 14.7 percent month-on-month to 4,136 cars. The others in the top 10 were Volkswagen (2,522), Audi (1,508), Ford (941), MINI (667), Lexus (571), Toyota (560), Nissan (496), and Chrysler (494).

European cars accounted for 79.7 percent of the new registration while the percentage stood at 12.1 percent for Japanese and 8.2 percent for American vehicles. Diesel cars and those with an engine displacement of 2,000 cc or less took up 65.1 percent and 55.9 percent of the new registrations, respectively. 

by Jung Min-hee

Top Quality Cars

Kia Motors Outperforms Japanese, German Brands in Initial Vehicle Quality



Kia Motors topped a U.S. vehicle quality study, excelling against most German and Japanese car brands.

According to the 2015 U.S. Initial Quality Study (IQS) released on June 17 (local time) by J.D. Power, a U.S. marketing information service provider, Kia Motors came in first among 21 non-premium brands, followed by Hyundai Motor, Chevrolet, and Toyota.

Among 33 brands, including 12 premium, Kia and Hyundai ranked second and fourth, respectively, ahead of BMW, Lexus, Mercedes-Benz, and Audi.

The IQS study examines problems experienced by vehicle owners during the first 90 days of ownership across eight areas, such as engines and transmissions. The IQS, which is an important factor to decide brand loyalty and repurchases for U.S. customers, is determined by the number of problems experienced per 100 vehicles (PP100), with a lower score reflecting higher quality.

Among 21 non-premium brands, Kia topped the list, posting a score of 86 PP100, followed by Hyundai with 95 PP100, Chevrolet with 101 PP100, and Toyota with 104 PP100.


When 12 premium brands are included in the ranking, Kia came in second after Porsche, which ranks the highest in initial quality for the third consecutive year with 80 PP100. Hyundai ranked fourth after Jaguar, posting a score of 93 PP100. BMW, Lexus, Benz, and Audi came in sixth, ninth, 14th, and 16th, respectively, meaning that the four popular premium carmakers performed poorer in initial quality than the two Korean automakers.

By vehicle, Hyundai Motor's Accent sedan topped the small-size sedan segment, while its sports utility vehicle (SUV) Tucson was rated the most reliable in the SUV category. Kia's SUV Sorento and compact multi-purpose vehicle Soul topped the list in their respective categories.

ries.

“This marks the first time in the history of the study that Kia Motors led all non-premium makers in initial quality. This is a clear shift in the quality landscape,” said Renee Stephens, vice president of U.S. automotive quality at J.D. Power. “We are seeing Korean makers really accelerate the rate of improvement,” she added.

Also, in a report titled “Korean brands lead industry in initial quality, while Japanese brands struggle to keep up with pace of improvement,” J.D. Power said that Korean brands continue to widen the quality gap with other automakers, while Japanese makers collectively fell below the industry average for the first time in 29 years.

Hyundai Motor Group officials are expressing hope that the study will boost its sagging U.S. sales in the coming months. 

by Jung Min-hee

Invest China

Hyundai Motors Starts Its 5th Plant in China amid Slowing Economy



The skyline of Chongqing, China, from Nanshan mountain. (Photo by Oliver Ren via Wikimedia Commons)

Hyundai Motors began constructing its fifth factory in China to meet the future demand for compact cars in the world's largest auto market.

Hyundai, which already started building its fourth plant in the Chinese city of Changzhou in April, announced its plan to construct a fifth plant in the southwestern megacity of Chongqing. "With the Chongqing plant, Hyundai Motors secures a bridgehead to make inroads into the western part of China," said Vice Chairman Chung Eui-sun.

South Korea's largest automaker joined hands with Chinese automaker BAIC Group to invest US\$1 billion in constructing the new plant. Scheduled to begin production in early 2017, The Chongqing plant will have an annual production capacity of 300,000 units of compact sedans and SUVs and be established in Liangjiang New Area, a state-level new economic development area, in Chongqing City. Built on a 2 million square meter site, the plant will have 274,000 square meters of floor space, featuring complete vehicle and engine production facilities including press work, body work, painting, and design. When completed in 2017, the new plant will mass produce small and

mid-size models specifically designed for the Chinese market.

"We are very pleased to be building our fifth plant in Chongqing -- a city located in Midwest China, where robust economic growth is taking place," said Hyundai Motor Group Vice Chairman Chung during a ceremony to celebrate the plant's construction.

"The Chongqing plant will act as a bridge connecting east and west China and enhance Hyundai Motor's standing to become a leading automaker in China," he said.

Hyundai chose to launch its 5th factory in Chongqing given the city's strategic location connecting western and eastern China, and its fast-growing automobile market and favorable governmental support. With a population of 30 million and 83 percent of the size of Korea, Chongqing City has witnessed an average two-digit growth rate. It is considered to be one of the most important bases for development in mainland China. In a bid to put up the plant in Chongqing, Hyundai Motor Group Chairman Chung Mong-koo has accepted the Chinese government's request and built its fourth plant in Cangzhou, Hebei province.

The new plants in Changzhou and Chongqing will produce "new small cars and small sport utility vehicles to compete against the ever-growing sales of Chinese brands and strengthen price competitiveness," the released statement by the company read.

Once the fourth plant in Cangzhou and the fifth plant in Chongqing are completed in 2017, the carmaker's annual production will be pushed up to a total of 2.6 million units in China – 1.71 million units of Hyundai Motor and 890,000 units of Kia Motors, rivaling Volkswagen and GM.

In the meantime, Hyundai will increase its dealership stores in China to 2,000 by 2016, up from 1,700 now.

Auto sales in China have been slowing, as the country's economy grew only 7.4 percent last year, marking its slowest pace in 24 years. Chinese brands have also cut prices, making it difficult for Hyundai to sell vehicles.

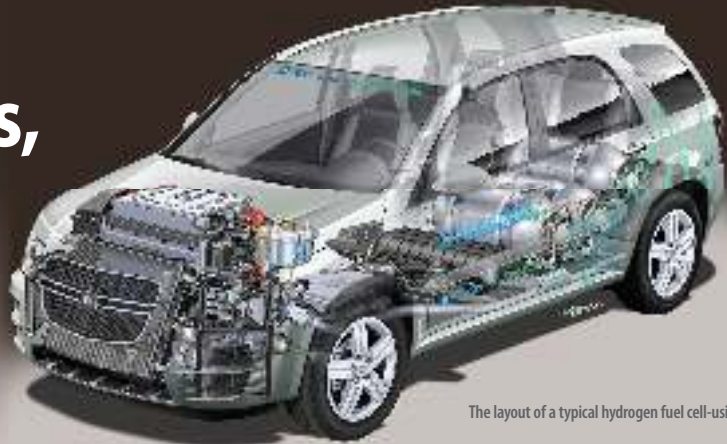
In May, sales of Hyundai passenger cars in China fell by 0.4 percent. In the first five months of the year, sales of Hyundai in China declined by 3.5 percent.



by Marie Kim

Hydrogen Hurdles

Hydrogen-powered Car Makers Suffer from High Prices, Lack of Infrastructure



The layout of a typical hydrogen fuel cell-using car.

The big two auto makers that seek to dominate the hydrogen-powered car market, Hyundai Motor and Toyota, are struggling to expand supply.

Even though hydrogen-powered vehicles have enough potential to be called the “ultimate eco-friendly car,” they have difficulties in spreading due to high cost and a lack of proper infrastructure. In particular, Hyundai Motor is suffering more because of less government funding in comparison with Japan.

According to industry sources, Toyota currently sells the Mirai fuel cell vehicle at a price of US\$57,500 (62.34 million won) in the U.S. It is almost twice as expensive as an average medium-sized sedan. When leasing the Mirai, consumers should pay US\$499 (540,000 won) a month. Based on the lease price, it is almost three times higher than that of Toyota’s new Corolla.

Hyundai Motor sells the Tucson ix for 85 million won (US\$76,937) in the domestic market. The company lowered its price by 43.3 percent from the previous price of 150 million won (US\$135,771). However, individual customers do not purchase the model, since they cannot receive subsidies from the government. The Tucson ix is available at the price of US\$499 (551,295 won) a month with a deposit of US\$2,999 (3.31 million won) in the U.S.

A U.S. market research firm City Research said, “Hydrogen-powered vehicles have lower price competitiveness than internal combustion locomotives, and this gap is getting wider due to prolonged low oil prices. They, including the Mirai, will not have much influence in the auto market until 2020.”

A hydrogen vehicle is a vehicle that generates electricity by reacting hydrogen with oxygen in a fuel cell for motive power. Since it does not emit any exhaust gases and pollutants except for water, the vehicle is considered the ultimate stage of the evolution of eco-friendly vehicles.

Releasing the Tucson ix in 2013, Hyundai Motor established

the mass production system of hydrogen vehicles for the first time in the world. In 2010, the Korean government encouraged the company to dominate the related market in advance by presenting a “Green Car Development Road Map,” and it led to the birth of the world’s first hydrogen vehicle in Korea. However, a concrete development plan has not come up for five years since then, obstructing supply expansion. State funding this year also dropped by 150 million won (US\$1.36 million) to 200 million won (US\$1.81 million) from 350 million won (US\$3.17 million) last year. Moreover, there is no plan to expand hydrogen energy stations within this year. Without proper infrastructure, it is only fair that consumers do not buy hydrogen vehicles. It is estimated that the company sold only 200 cars of the Tucson ix at home and abroad for a year and a half.

An official from Hyundai Motor said, “Whether to build infrastructure or not, it is hard to expect that the Tucson model would sell well at the market price of 85 million won [US\$76,937]. Only when an effective competition system is established with long-term expansion of infrastructure and government support will the related market be formed.”

Toyota has similar worries but its situation is better than that of Korea. The Japanese government supports up to 280 million yen (US\$2.28 million or 2.54 million won) per hydrogen station in subsidy. Currently, there are 20 private stations in Japan. The country plans to supply 5 million hydrogen cars by 2020. The government provides subsidies of US\$25,000 (27.13 million won) per unit. An official from the industry said, “In the North American market, there will be fierce competition with the release of the Honda FCX Clarity, and new models of Fiat Chrysler. If Korea loses out in the hydrogen vehicle market as well as electric vehicle market, it will be hard for the country to secure its competitiveness in the future eco-friendly vehicle sector.”

by Jung Min-hee

Hydrogen Infrastructure

Hyundai Motor Group Establishing Infrastructure for Hydrogen Powered Cars



Hyundai Motor Group Vice Chairman Kwon Moon-sik (left), Gwangju Metropolitan Mayor Yoon Jang-hyun (center), and Gwangju Creative Economy Innovation Center Executive Director Yoo Ki-ho stand in front of Gwangju Metropolitan City Hall on June 11.

Hyundai Motor Group will begin to construct infrastructure for hydrogen fuel cell vehicles in Gwangju Metropolitan City.

In a signing ceremony attended by Gwangju Metropolitan Mayor Yoon Jang-hyun, Gwangju Creative Economy Innovation Center Executive Director Yoo Ki-ho, and Hyundai Motor Group Vice Chairman Kwon Moon-sik, the group signed a contract at Gwangju Metropolitan City Hall on June 11 to cooperate in establishing integrated stations and testing the operation of the hydrogen fuel cell buses.

Under the agreement, Gwangju Metropolitan City will provide infrastructure including relevant sites, while Hyundai Motor Group will offer various technologies and activities to construct integrated stations.


An integrated station is a piece of infrastructure that plays a role as a hydrogen fueling station, electric car charging station, and electricity distribution feeder after hydrogen production. It provides hydrogen to hydrogen fuel cell vehicles, and it can also supply electricity to charge electric vehicles using electricity generated with stored hydrogen. Gwangju Creative Economy Innovation Center is planning to complete it by the end of this year.

The integrated station is considered to be the foundation to create an ecosystem related to the front and rear industries of

hydrogen fuel cells. In a bid to build a platform for the integrated stations, Gwangju Creative Economy Innovation Center will analyze the business models of fuel cell projects and Vehicle to Grid (V2G) demonstration projects. It will also evaluate the performance and verify commercialization of products and technologies such as hydrogen fuel cell vehicle inverters and fuel cell generators.

Gwangju will also take hydrogen fuel cell buses for a spin. Hyundai Motor will offer a 16-passenger hydrogen fuel cell bus to the city and operate it on a trial basis.

Hyundai Motor Group's hydrogen fuel cell bus will be provided to Gwangju Metropolitan City free of charge until May next year so that the city can evaluate its performance and eco-friendliness. The bus is a next-generation environmentally-friendly vehicle that has the integrated eco-friendly technologies developed by the group. It can speed up to 100 kilometers per hour and has a driving range of 440 kilometers on a full charge. The hydrogen fuel cell bus emits water instead of exhaust while driving.

Hyundai Motor is planning not only to develop a third-generation hydrogen fuel cell bus in the future but also to lead the government's green car development policy along with the Tucson hydrogen-powered vehicle, an electric bus, and the Sonata plug-in hybrid. 

by Cho Jin-young

Raking It In

DSME May Become World #1 in Winning Orders



Daewoo Shipbuilding & Marine Engineering (DSME) could become the world's number one in terms of the number of orders awarded. The company has already ranked first in terms of an accumulated order backlog among single dockyards and is closing the gap with Hyundai Heavy Industries, which is still number one in the shipbuilding sector.

According to Clarkson, a British market survey institute that focuses on shipbuilding, on June 23, the Okpo Shipyard of the DSME placed first among single dockyards in the world as of the end of last month in the rankings of compensated gross tonnage (CGT) in an accumulated order backlog, with an amount of 8.299 million. The shipyard has maintained the top spot for seven straight months.

Geoje Shipyard of Samsung Heavy Industries recorded 5.463 CGT, or 93 ships, in its backlogs, securing second place. Also, Ulsan Shipyard of Hyundai Heavy Industries has maintained third place for three consecutive months with 4.472 CGT, or 92 ships. Hyundai Heavy Industries' subsidiaries, Hyundai Samho Heavy Industries and Hyundai Mipo Dockyard, ranked fourth and fifth, respectively, following Hyundai Heavy Industries.

By each dockyard, the DSME took first place, being followed by Samsung Heavy Industries and Hyundai Heavy Industries. By shipbuilding group, however, Hyundai Heavy Industries has still maintained its top position in the world by a narrow margin.

By shipbuilding group, Hyundai Heavy Industries, which runs Hyundai Samho Heavy Industries and shipyards in Ulsan and Gunsan, has maintained the number one spot in the world with 9.256 CGT, or 208 ships. The DSME, which runs Okpo Shipyard in Geoje and Daewoo Mangalia Heavy Industries S.A., is currently in second place in backlog with 9.097 CGT, or 156 ships. Hyundai Heavy Industries' winning margin is only 1.7 percent.

Hyundai Heavy Industries has never yielded the top position to domestic dockyards. However, the DSME is highly likely to rank first in the world in terms of backlogs if Hyundai Heavy Industries doesn't win any contracts this month.

The DSME has already received an order from Maersk Line of Denmark to deliver 11 container vessels with a capacity of 19,630 TEU at the beginning of this month.


In the meantime, the shipbuilder's new demand prediction platform and maintenance, repair & operation (MRO) services for ships was selected as a smart service pilot project using big data, which was proposed by the Ministry of Science, ICT, & Future Planning and the National Information Society Agency.

The objective of the project, which is organized by the DSME and participated in by Duzon and the Federation of Korean Convergence Industries, is to discover a new growth engine for the Korean shipbuilding industry, which is facing difficulties at home and abroad, using big data.

The new ship demand prediction platform is a system that complements the character of the shipbuilding industry in which it is hard to create new demand. Shipbuilding is a traditional order-made production industry in which it is difficult for manufacturers to create new ship demands, unlike other manufacturing industries.

Based on the big data platform, which will be developed by IT company Duzon, the DSME is planning to analyze data on cargo volumes, macro-economic indicators, and shipping-related indicators, and to preemptively discover new ship types and technology that will lead the market.

MRO services is a business model that provides maintenance, repair, and operation services by using data on ship equipment conditions, classification inspection schedules, and equipment suppliers. When a specific ship is scheduled to enter Busan Port, it offers the best MRO package services by analyzing relevant information.

Big data links ships, ports, ship inspection institutions, repair dockyards, and equipment suppliers, so it is expected to strengthen the competitiveness in the shipbuilding industry and coexistence between small, medium, and large-sized companies. 

by Jung Min-hee



KARI is the second to develop a tiltrotor Unmanned Aerial Vehicle that takes off and lands vertically and flies at high speed.

Unmanned Aerial Technology

KARI Accelerates Commercialization of Unmanned Tiltrotors

Presided over by President Park Geun-hye, the Ministry of Science, ICT and Future Planning and the Presidential Advisory Council for Science and Technology presented the industry support strategies for unmanned aerial vehicles (UAV) at the 22nd National Science and Technology Council Meeting which took place on May 29. Also, they came up with plans to secure advanced technologies on drones within two to three years, and to use tiltrotors, with technology that already stays ahead of other countries, for national defense and disaster monitoring.


The Korea Aerospace Research Institute (KARI) is the aeronautics and space agency of South Korea. It has become the world's second company to localize tiltrotor Unmanned Aerial Vehicles (UAVs) that are able to take off and land vertically and fly at high speed. Also, it will start full-fledged commercialization from next year. The TR-60, which was co-developed by KARI and Korean Air, is the model to be commercialized. It can fly at speeds of up to 240 kph at altitudes of 4 km. Selected as an industrial engine project by the Ministry of Trade, Industry and Energy, it is currently under the preliminary feasibility study for securing budget.

Until now, the tiltrotor UAV has never been commercialized in the global market. Once it succeeds in commercialization, therefore, the agency is expected to dominate the UAV market, which is growing. As Ukraine and Indonesia currently showed considerable interest in the TR-60, it is highly likely to be export-

ed in the future. Since the tiltrotor is able to fly more than twice as fast as a helicopter with higher altitudes, it can monitor, search, reconnoiter, transport, and communicate in large areas.

KARI also developed a double-seater aircraft, which can be both used as manned and unmanned aerial vehicles. It used aviation parts, which was developed by domestic companies. Also, it has a precision flight test system, which enables testing under actual flight conditions, so it is possible to fly precisely and for up to 10 hours. The aircraft can be used as a UAV to monitor disaster in the nation, and be reused through unmanned obsolescence tasks.

It also shows tangible results in the high-altitude endurance electric powered UAV (EAV) sector. The drone can fly in the stratosphere with an altitudes of 12 kilometers for a long time, and perform some tasks of satellites, including real-time precise ground observation and communications. Since it is being paid attention as unmanned aerial vehicle technology for the future, advanced countries are scrambling to compete in its technical development.

Its electricity is powered by a hybrid propulsion system of solar cells, fuel cells, and secondary battery. KARI succeeded in its EAV-2H flying for 25 hours and 40 minutes in 2013. Last year, it also finished its efficiency test to fly at the altitudes of 10 kilometers. This year, the company will conduct the test to fly for 24 hours at the stratosphere using its EAV-3. 

by Cho Jin-young

International Orientation

KEF Hosts Korea-Finland Startup Summer Program for Global Entrepreneurship

The Korea Entrepreneurship Foundation (KEF, Chairman Hwang Chul-joo) carried out domestic orientation for the Korea-Finland Startup Summer Program for Global Entrepreneurship on June 24. Before sending Korean college students to Finland, the organization introduced them to the local startup ecosystem.

In the domestic orientation, the participants were offered a program introduction, a question and answer session with its coach Meri Vainio, indoor lectures including safe trip education by the Ministry of Foreign Affairs, and field trips to educate them on Korean history and culture.

The Korea-Finland Startup Summer Program for Global Entrepreneurship will kick off in the second week of July right after sending students to Finland. The program was organized to help Korean entrepreneurs stay in Finland for four weeks from July 12 to August 7 and develop startup items. The participants will seek a “born global strategy” by developing ideas based on problem solving, mentoring, visiting local enterprises, and attending special lectures.

The program is co-hosted by the KEF and Aalto Entrepreneurship Society of Finland. This year is the first time it has been run, and its participants were selected by six institutions - Kyungpook National University LINC Business Center, Duksung Women's University Industry Academic Cooperation Foundation, Seoul National University Entrepreneurship Center, Sungshin Women's University entrepreneurship education center, Pohang University of Science & Technology (POSTECH) Entrepreneurship Center, and Korea University of Technology and Education LINC Business Center.

Based on private and public partnerships in Korea and Finland, the program is planned thanks to active support from rel-




Members of the Korea-Finland Startup Summer Program pose for a photo.

evant agencies, including Korea's Small and Medium Business Administration, the Embassy of Finland in Seoul, Finland's trade representative FinPro, and Finland's local government Espoo.

Aalto University Professor Timo Nyberg, who co-designed the program, said, “Complying with the trend that the entrepreneurship environment is rapidly growing around the globe, including Silicon Valley, Tel Aviv, Shanghai, New York, London, and Seoul, we are trying to provide an opportunity for Korean participants to help build a network with international startups, which have settled in Finland's startup environment.”

Through the Korea-Finland Startup Summer Program for Global Entrepreneurship, the participants will be able to expose their teams and startup items to Finland's unfamiliar startup ecosystem and verify their ideas from a new perspective by interacting with entrepreneurs with a variety of nationalities who aim to make inroads into the global market.

Visit the program's official website (www.startupsummerprogram.org) for more information about the whole schedule of the four weeks, instructors, managers, and 14 participants. 

by Cho Jin-young

Internet of Subsidized Things

Korean Gov't to Cultivate Small-Medium IoT Companies

The Korean government has decided to invest 5 billion won (US\$4.5 million) in 67 projects to nurture start-ups and help small and medium-sized enterprises (SMEs) launch Internet of Things (IoT) converged services.

The Ministry of Science, ICT and Future Planning (MSIP) announced on June 14 that it selected 67 support projects worth 5.23 billion won (US\$4.67 million) as part of the three year plan



for K-ICT strategy and economic innovation.

Through selected projects, the MSIP will provide various kinds of support to foster and expand the IoT industry from the establishment of a business to overseas expansion. Specifically, it will cultivate start-ups with the potential to turn creative ideas into money-making ventures. The government agency will also provide support for the development of smart sensors and open-source platform-based services that connect things. In addition, it will promote the mutual growth of the existing and IoT industries,

and help promising services and products available in global markets.

Kang Sung-joo, head of the Internet Convergence Policy Bureau at MSIP, remarked, “We will continue our support to address problems that people working at IoT-related companies experience. We will also provide full support to commercialize and introduce promising IoT products and services to other countries through public-private partnerships.” ^{BK}

by Cho Jin-young

Creative Korea

Venture Capital Gathers in Seoul for 2015 Creative Startup Korea

The 2015 Creative Startup Korea opened at the COEX Convention Center in Seoul on June 3. The two-day event is sponsored by the Korea Trade-Investment Promotion Agency (KOTRA), the Creative Economic Initiative Public-Private Partnership, and the Seoul Business Agency. Eighty venture capital firms from 12 countries, along with 150 South Korean startups, are taking part in the event that was organized to help domestic startups attract investment and provide opportunities to advance into overseas markets.

It is exceptional that foreign venture capital firms gather at an event for domestic startup investment, which shows a growing interest in global venture capital in Korean startups. In particular, Israel’s Yozma Fund announced an intent to invest in Korea last year, and Google recently opened its first Asian campus.

The event will include a showcase of new products, one-on-one investment consultations, an investor relations session, Fireside Chats, speeches by founders of successful startups, and Japan’s venture capital seminars.

In the showcase, a total of 150 firms, including firms operating in creative economy innovation centers and incubating firms of the Seoul Business Agency, will display creative and high-technology products. The main areas are Internet of Things (IoT), hardware, software, Big Data, mobile, games, healthcare, and education. Foreign investors will personally visit exhibition booths and have one-on-one investment consultations. During the investor relations session, 22 selected startups will have the chance to pitch to venture capitalists in a bid to win investors’ hearts.

Christine Tsai, one of the founding partners of 500 Startups in the U.S., delivered a keynote speech at the event’s opening ceremony. She said, “We have been operating the 10 billion won [US\$9.03 million] micro-fund called “500 Kimchi” in cooperation with the Small and Medium Business Administration and the Korea Venture Investment Corporation since Feb. We have a high



opinion of Korean ventures’ potential.”

Thanks to the trip of President Park Geun-hye to Chile in Latin America in April, Start-Up Chile also visited the country and sought startups, which are able to make it in the Chilean market. The organization is in charge of the startup support projects of the Chilean government, and it has been investing up to US\$40,000 (44.29 million won) in each firm to more than 800 firms from 65 countries since 2010. Sebastian Diaz, the director of communications at Start-Up Chile, said, “Through the event, we have confirmed the potential of Korean startups. We are hoping to see more Korean startups in the Chilean market in the future.”

Also, startups that have achieved success in overseas markets visited the event to pass on their expertise. Tim Hwang, CEO of Fiscal Note, which was selected as one of 10 startups that are transforming industries by CNN, presented ways for Korean startups to make inroads into the American market, citing his personal experiences from high school.

Meanwhile, the KOTRA operates an “Invest Korea” consultation booth to provide information about South Korean investment laws and procedures and the government support policy to foreign investors.

Kim Sung-soo, head of KOTRA’s Marketing Strategy Division, said, “There is a growing interest by overseas venture capital firms in Korean startups. We are hoping that the event helps Korea become a hub of Asian startups.” ^{BK}

by Jung Suk-yee

Global Opportunity

5 Korean Startups Win 3-month Stay in Berlin from Apora Ventures

On the evening of June 25, a group of young Korean entrepreneurs jumped into the air and shouted in victory at the event room of Google's Campus Seoul, where "BETAPITCH | SEOUL" had just completed. They had just won the Grand Prize from Accelerate Korea out of ten contestants, after spending weeks with 9 other contestant companies preparing presentations, refining their ideas, and getting ready for their Betapitch, when they would give their pitch to win a prize.

Out of the 10 contestants, the fifth place winner of the Demo Day presentation contest was ConsiderC. They are a small team developing a next-gen exercise bike linked with a database and a smartphone app to give its users sensible, obtainable objectives in health and fitness. They said that they were looking to go to Berlin to get more potential distribution partners.

The fourth place winner was BbuzzArt, a social networking service for artists. Their presenter, Jun Kim, said that within art schools, the physical social network that people engage in is very stimulating, but that after graduation many artists wither in obscurity, cut off from the connections they made. She hopes to keep that art network alive and even expand it via BbuzzArt.

The third place winner was Master Company's 04Master app. The company's CEO, Andrew Kim, explained that he built a web site and app platform to match construction companies and heavy equipment owners together in a social network. In the Korean construction scene, many freelance equipment owners exist, but they struggle to find work via word-of-mouth or traditional advertising methods. With his 04Master platform they can find each



Raymond Hong, CEO of Jokerpack, presents his company's product BeeCanvas at "BETAPITCH | Seoul" on June 25.

other more easily. He said that he wanted to go to the German market via the Accelerate Korea program because he heard that the German construction marketplace is very similar to Korea's.

The second place winner of the Demo Day presentation contest was Seerslab. Their CEO, Michael Chong, showed his app called Lollicam, designed to allow people to edit and pre-process video on their phone to make fun media to share with their friends and family. The app is already quite popular on the Google App Store, and Seerslab is in negotiations with Disney to create a version for that company that includes a way to edit yourself to look like popular Disney characters.

The Grand Prize winner of the event that night was Jokerpack, a company led by Raymond Hong. They presented their web and mobile application based on a simple idea, that people need a large, simple white board on which to organize multimedia and documents online. Their

web site, beecanvas.com, is already up and functional, and allows one to drag and drop document files, links, video clips, image files, and text on a canvas to facilitate real-time collaboration. It is not only a blank canvas that groups can fill with content, but also serves as cloud storage, a physical place where that content can be stored. According to Raymond, "We are completely reinterpreting cloud storage and how we perceive information online to create more natural communication system for humans."

These are the first Korean companies to participate in this Accelerate Korea program, but they are by no means the last. Apora Ventures shows a commitment to uncovering and helping small and medium Korean companies expand into the European market, and are well supported in this venture via their strong partnership the Korea Institute of Startup and Entrepreneurship Development (KISED). 

by Cho Jin-young

2015 Goesan International Organic Expo

Sharing the True Value of Organic Farming

by Jung Min-hee



ISO FAR 2015 Goesan
International Organic EXPO+Industry Fair



Huh Kyung-jae, secretary general of the organizing committee of 2015 Goesan Organic Expo.

There are only about 80 days left until the opening of the 2015 Goesan International Organic Expo & Industry Fair, which will take place in the Organic Expo Farm in Goesan-eup, Goesan-gun, Chungcheongbuk-do (or North Chungcheong Province), for 24 days, from Sept. 18 to Oct. 11, 2015. The province has already

started full-scale preparation to host the world's first international organic expo, including construction of event halls, exhibition presentation, and the attraction of companies and visitors from home and abroad. BusinessKorea met Huh Kyung-jae, secretary general of the organizing committee, to ask about its specific preparation plans and the future vision of the expo.

The opening of the 2015 Goesan International Organic Expo & Industry Fair is 80 days away. What does the organizing committee concentrate mostly on to prepare for it?

Organic living is not just the concept of eating organic foods. It is more about coexistence and symbiosis to live a healthy life in harmony with nature, unlike existing-environmentally destructive farming. Accordingly, the committee focuses on the development of exhibitions and experience programs for the event in a bid to deliver the true value of the organic lifestyle to the public, and simplify it so that it can realize an event in which visitors can feast their eyes.

There will be several main programs at the event. Ten main theme exhibitions will display scientific data about the value and the industry of organic living. Seven outdoor exhibitions will allow visitors to have a direct experience and suggest the visions of the organic industry. Industrial exhibitions will become a forum where 250 organic companies at home and abroad take part to mutually exchange trade. Special theme halls will enable visitors to experience medical care and beauty technology using organic farming, including an organic healthy diet, organic treatments, and organic cosmetics. Moreover, there will be various conventions,

policy forums, organic experience tours, organic cultural performances, organic foods, and organic direct trading markets.

As the head of the organizing committee of the Goesan International Organic Expo & Industry Fair, which is Korea's representative organic expo, what do you think about the reality of Korea's organic industry?

The organic farming industry is the best alternative to overcome the unstable ecology imbalance of environmental pollution and global warming. Also, a growing interest of people in eco-friendly lifestyles and a desire for safe foods are the driving force to lead the organic farming industry to a high value-added new growth strategic business.

Korea's organic and pesticide-free farming cultivation areas account for about 7 percent of the total, showing an average high growth rate of 20 percent in the domestic organic food market with 400 billion won (US\$356.35 million).

With the recent spread of health trends including agricultural product safety and well-being, the demand for organic foods is constantly increasing, and the relevant market is expected to continuously expand thanks to the government's policy on promotion.

Until now, however, organic farming policies have been more focused on suppliers, which are led by the government, rather than consumer-oriented policies that include national health and food safety. Accordingly, an institutional framework needs to be established in order to raise consumer confidence and expand the base of consumption of organic foods.

Chungcheongbuk-do set its policy objective to become recognized as an organic-specialized province by 2020. We are curious about its background and specific plans.

Chungcheongbuk-do has set an ambitious future strategy to transform the province into a specialized high-value-added organic farming industry area by changing its agriculture into organic methods. Through the strategy, the province plans to dominate the future farming industry in advance and foster it to improve its international competitiveness. By 2020, the province aims to increase the production of organic and pesticide-free produce from 4.2 percent to 20 percent, and organic and non-antibiotic animal products from 6 percent to 20 percent. Also, it plans to expand the number of organic food processors from 33 to 150 and the proportion of school meals using organic and pesticide-free produce from 31 percent to more than 80 percent.

In order to do so, the province has come up with various measures in a bid to support small individual farms, such as the provision of a certification cost for pesticide-free and organic produce, and farming subsidies, the support for organic animal products and animal welfare, and the support expansion of organic materials.

Also, Chungcheongbuk-do plans to complete its organic farming research center within this year in order to train specialized organic produce farmers and to expand support for research and development, and education. As the province will create a comprehensive organic services complex including tours, experiences, and ecology learning with the theme of organic farming, it will spread the superiority of organic farming and its public value and expand the confidence and consumption of organic foods.

What are the strengths and weaknesses of Goesan and Chungcheongbuk-do as the base of the organic farming industry?

The National Institute of Environmental Research (NIER) announced in 2012 that Chungcheongbuk-do is the area safest from natural disasters after analyzing the climate change assessment results of 16 cities and provinces in the country.

Chungcheongbuk-do, located in the center of Korean land, is the source of the Han River, Geum River, and Nakdong River, and is considered to be a clean area that is preserved in its natural state, with national parks such as Songnisan National Park, Worsaksan National Park, and Sobaeksan National Park.

Currently, Goesan is the source of organic farming history and the headquarters of organic product companies including Hansalim (common living), Heuksalim (soil living), Natural Farming School, and the Icoop Living Cooperative Association. It is the leading self-governing body in the organic farming sector that creates an organic food industry complex in Chilsung of Goesan, and the Goesan fermented food industrial complex in Geosan Town (Goesan-eup).

At the center of the country, the province has a geographical advantage in that tourists from everywhere in the country can visit the expo within two hours.

With such a strength, Geosan was chosen as the site of the 2015 Goesan International Organic Expo & Industry Fair regardless of low national awareness.

Please tell us about the visions and strategies in order for Korea's organic produce to tap into the global market.

With the increase in consumption, the organic food market has steadily grown in the world, and is rapidly expanding focusing on the markets in Europe and East Asia.

In particular, China is expected to become the world's largest market in the next five to 10 years, as the country is seeing improvement of the standard of living, and rapid growth in the demand of green consumption.

In a bid to actively take action against the expansion of the FTA markets, the province needs to promote the organic farming industry as strategic export sector by improving its competitiveness, and dominate the global organic food market in advance.



The bird's-eye view of the venue of the ISO FAR 2015 Goesan International Organic Expo + Industry Fair, which is four months ahead.


Chungcheongbuk-do has opened a "North Chungcheong Province Shanghai Office" in Jan., which has played a role as the bridgehead to seek the market advance of Korean agricultural products, using it as an advanced base to accomplish exports of US\$400 million (673.5 billion won). China is the first target market of its organic agricultural products after signing the FTA. The province will support overseas marketing including organic food exhibitions and promotion, export consultation to the Chinese market, and buyer matching.

Through aggressive overseas and niche marketing this year, we will diversify export markets to Chinese-speaking countries with high demand potential, ASEAN countries including Vietnam, Malaysia, Thailand, and Singapore, and North America. Also, the province is planning to steadily expand export incentive supports in order to encourage production will and inspire the self-confidence of export companies.

What do you expect from the event? Also, please tell us about the desirable development strategy for the Korean organic farming industry.

By hosting the expo, Chungcheongbuk-do plans to lead the spread of sustainable farming and the trend of the organic farming industry, and firmly establish its status as a region specialized in the organic farming industry. Also, the province expects to see regional economy activation, such as revenue generation and an increase in production and export, by improving the brand competitiveness of its organic farming industry.

Successfully hosting the 2015 Goesan International Organic Expo & Industry Fair, we expect to create a boom of organic foods all over the nation, and to spread organic farming to produce safe and healthy food. Also, the province is planning to develop and spread organic farming technology and to help popularize organic foods. The expo is expected to have direct and indirect ripple effects of 181 billion won (US\$161.25 million) throughout the economy and to create 1,824 jobs.

In a bid to actively respond to the rapidly changing international organic market, including dominating the organic food market in advance in the Asian regions and seeking export plans according to FTA agreements, the government needs to preemptively and strategically create an organic farming cluster and use it as an advanced base to develop the organic farming industry, as well as turn itself into a mecca of the organic food industry in Korea. 

Methane No More**Tech Developed to Mass Produce Methanol Using Greenhouse Gases**

A Korean research team succeeded in developing an eco-friendly technology to turn CO₂ and methane, which are considered to be main culprits in drastic climate change like global warming, into chemical materials essential for industry and everyday life.


The Korea Research Institute of Chemical Technology (KRICT) announced on June 16 that it held an opening ceremony for a methanol-manufacturing plant at Hyundai Oilbank's headquarters in Seosan, South Chungcheong Province, and successfully operated test runs together with the nation's fourth-largest refiner.

The methanol production process technology developed by a team led by Dr. Jeon Ki-won at KRICT can produce synthetic gases by putting CO₂, methane, and water vapor into a synthetic gas reactor and injecting a catalyst. It is possible to produce methanol from synthetic gases manufactured in this way.

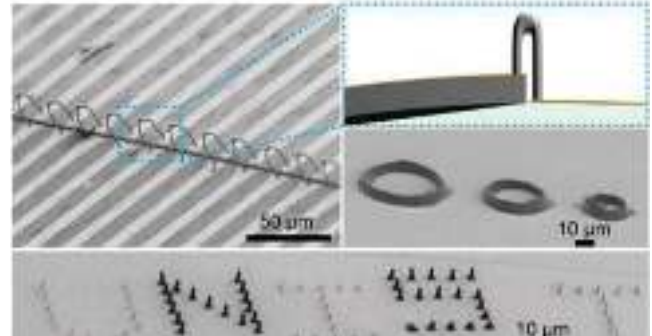
The new methanol plant with a daily production capacity of 10 tons is ready for commercialization. Once it is commercialized, it will be possible to locally process more than 1 million tons of methanol each year, instead of importing it.

The existing production process requires a lot of money and energy to extract oxygen from the air and react it with methane. However, the newly-developed method makes it possible to produce methanol at a low cost and energy using CO₂ and methane.

In particular, the technology uses over 95 percent of injected CO₂ in the chemical reaction, thereby improving energy efficiency. Compared to the existing production process, the new method can also reduce the amount of CO₂ emissions by 30 percent.

The KRICT and Hyundai Oilbank are planning to accumulate experience by running the plant and to design another plant capable of producing 1 million tons of methanol per year. 

by Cho Jin-young

0.001 Millimeter Printing**Ultrafine 3D Printing Tech Developed for Wearable Devices**

The curved circuit board and micro 3D structure that Material Science and Engineering Professor Park Jang-ung and his research team at Ulsan National Institute of Science and Technology have created with their newly-developed 3D printing technology.

A Korean research team has developed a three-dimensional (3D) printing technology that can print a 0.001 mm sized ultrafine pattern to be used for the production of curved and flexible electronic circuits.

Ulsan National Institute of Science and Technology (UNIST) said on June 22 that a materials science and engineering research team led by Professor Park Jang-ung has succeeded in printing ultrafine, 0.001 mm wide patterns on plastic circuit boards at room temperature.

According to UNIST, it has been difficult for the industry to apply 3D printing technology to the field of electronic circuits, even though the technology has drawn much attention as a promising technology in the future.


Existing 3D printers cannot process anything below 0.1 mm. They also cannot properly handle circuit materials like metal or semiconductors, since they are run at a high temperature.

The new 3D printing technology called electrohydrodynamic inkjet (e-jet), which the research team developed this time, has overcome such limitations.

First of all, the team elevated the resolution for 3D printers up to the 0.001 mm level. The 3D printing equipment is designed for blots of ink to dry out before they reach the circuit boards, which enables the printed blots injected from the nozzle to be piled on top of each other, which reduces the minimum printing resolution to be 50 times less than before. As a result, the technology realizes ultra-fine 3D patterns as thin as 0.001 mm, which is thinner than a red blood cell.

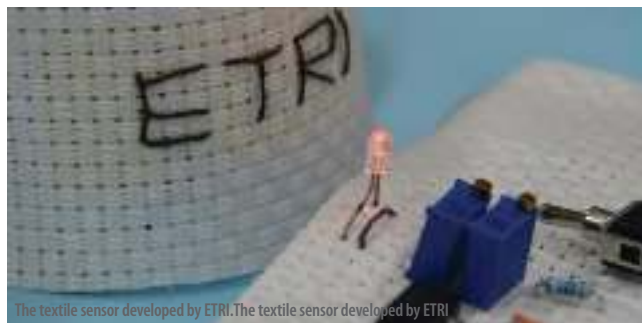
The new technology also allows a broader selection of materials to be used in 3D printing at room temperature by lowering the printing temperature. Existing printers use high-temperature processing, and plastic boards easily melt at the high temperature.

This means that the 3D printing of materials like textiles, fiber, or plastic, which can be attached to human skin, have become possible to produce electronic circuits for wearable devices.

The research achievements were published online in the German science and technology journal *Advanced Materials* on June 23.  by Cho Jin-young

Smart Clothes

Korean Research Team Develops Textile Sensor for Gas Detection




A Korean research team has opened a way to turn textiles into sensors.

The Electronics and Telecommunications Research Institute (ETRI) announced on June 17 that it has successfully developed a technology to make a washable, flexible, and highly-sensitive textile-type gas sensor.

The technology can be utilized to coat graphene using molecular adhesives to textile like nylon, cotton, or polyester so that textile can check whether or not gas exists in the air. When graphene oxides meet the NO₂ included in methane gases at room temperatures, their resistivity changes based on the gas density.

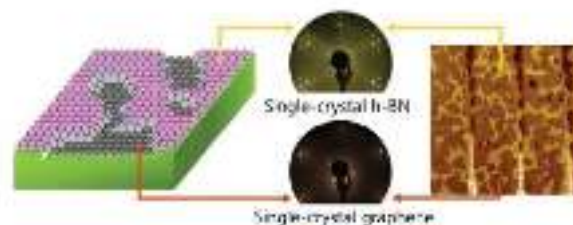
As a result, when putting out a fire or entering a small area in which the condition of the air cannot be identified, it will be possible for firefighters to check the condition of the air through a connected device by wearing work clothes with gas sensors made from textiles.

“The gas sensor can maintain its function after being washed or bent, even 1,000 times,” explained the ETRI in a statement, adding, “Since the sensor is made from μm or mm thick threads or textiles, it can be utilized by putting a detecting substance on it. On top of that, it does not need additional power to operate.”

The ETRI is going to expand the kind of detectable gases, and plans to transfer the manufacturing technology to a flexible electronic device maker, a wearable device supplier, or a company related to textile-type filters.  by Cho Jin-young

0.25 Nanometers Thin

Korean Research Team Develops One Atom Thick Semiconductor



A single-crystal hexagonal boron nitride (h-BN) is grown on top of single-crystal graphene substrate using the newly-discovered process.

A local research team has successfully developed a technique to make the thinnest semiconductor possible.

The National Research Foundation announced on June 25 that Professor Ahn Jong-ryeol and Ph.D. student Shin Ha-cheol at Sungkyunkwan University succeeded in developing a technique for a 0.25 nm semiconductor. The width is the minimum limit for making nanomaterials, because ~0.25 nm is the diameter of one atom.


Local semiconductor companies are currently conducting studies to make 10 nm semiconductor devices, but this research team pushed the limits, since they thought that it would be possible to produce a semiconductor material just one atom thick.

The research team successfully grew a 0.25 nm single-crystal semiconductor material on a silicon carbide substrate by alloying graphene, a conducting material, and boron nitride with the property of an insulator into a 2D form (a folded form of the two materials).

Professor Ahn said, “Both graphene and boron nitride have a honeycomb-shaped structure with the same size. So, we were able to create a single-crystal property necessary for semiconductor devices, using a method to make a one-layered alloy in which a crystal of one material was settled between crystals of the other material in a horizontal fashion.”

They also succeeded in making a field effect transistor that amplifies the voltage using the 0.25 nm semiconductor material, which proved that the material can be utilized as a semiconductor device.

Professor Ahn explained, “Our research is significant in that it laid the groundwork for the commercialization of 0.25 nm class semiconductor devices.”

The research findings were first published online on May 14 by the *Journal of the American Chemical Society*, a weekly scientific journal published by the American Chemical Society. 

by Cho Jin-young

Third Avenue

Amore Pacific Becomes Nation's First Cosmetics Brand Opened in Bloomingdale's

On June 4 (local time), Amore Pacific opened a store on the first floor of the high-end department store Bloomingdale's in New York, in where global cosmetics brands are located including Chanel, Dior, Lancome, and Estee Lauder, attracting customers with Korean beauty.

Through its high-end strategy targeting the upper class American, Amore Pacific has become the nation's first cosmetics brand to enter the heart of the global beauty market. Accordingly, Amore Pacific has opened a store in all high-end department stores in the U.S., following the top department stores Bergdorf Goodman in New York in 2003 and Neiman Marcus in Washington DC in 2005.

An official from Amore Pacific Amer-


ica said, "With the technology using three natural materials, including green tea, ginseng, and beans, Amore Pacific products have become differentiated from other global brands and finally begun to work in the global market."

Amore Pacific has started seeing a success story in the advanced beauty market beyond Asia, including China. Considering the fact that it has opened its store in Bloomingdale's, industry watchers believe that it is just a matter of time to become the most desired brand from most high-end department stores in the U.S. shortly. Along with it, there has been a fad of cushion foundation, which is the main item of K-beauty.

In particular, the fact that Amore



Amore Pacific's booth in Bloomingdale's in New York.

Pacific is the first company to release a cushion foundation, which changes the makeup trend of women around the world, also helps strengthen its brand power. As the news that Lancome and Dior, which have low technical skills in the area, asked the company to join hands are spreading in the global beauty market, the status of Amore Pacific is improving. 

by Jung Min-hee

Snow Bingsu

Caffe Bene Starts Selling Ice Flake Desserts in Mongolia, Vietnam, Cambodia

Caffe Bene, Korean-based coffee shop franchise pursuing a complex cultural space (CEO Kim Sun-kwon, www.caffe-bene.co.kr), is launching Snow Ice Flakes, or Snow Bingsu, a new special menu item for the summer, in its stores worldwide, including in Mongolia and Vietnam. Bingsu is a traditional summer treat enjoyed in Korea.

The company started selling the Snow Bingsu in a total of seven flavors, including milk, strawberry, and tiramisu, in 11 stores in Mongolia, Vietnam, and Cambodia from June. With the release of the Snow Bingsu in other countries, Caffe Bene will update its existing bingsu menu and launch the company's specialized bingsu lineups. Making full use of its


global model Kim Soo-hyun, Caffe Bene is planning to promote the Korean dessert to local consumers.

Beginning from July, the company will also start selling the Snow Bingsu in its stores in other Asian countries and Middle Eastern countries such as the Philippines, Malaysia, and Saudi Arabia. Meanwhile, the Snow Bingsu, which was released for the first time by Caffe Bene in April this year, can be enjoyed to consumers' personal tastes by choosing toppings like mango and chocolate brownies, on soft milk-flavored shaved ice.

An official from Caffe Bene said, "As Snow Bingsu is winning popularity from consumers at home with its sweet taste and visual attractiveness, we are expect-



Caffe Bene's new bingsu menu item.

ing a positive response from customers in other countries as well. By launching Caffe Bene's various unique new menus in the global markets in the future, the company will positively promote Korean café and dessert culture to the world." 

by Jung Min-hee

Expensive Life

Foreigners Spend More on Living Expenses in Seoul than Tokyo

The Financial Times announced on June 17 (local time) that Seoul ranked eighth this year on the list of the cities in which foreigners have to spend the most to live in, climbing six notches from a year ago. The rankings are based on American consulting firm Mercer's recent survey. Seoul had ranked second in 2006 and 51st in 2009 on the list.

In the meantime, Tokyo, which used to top the list for a while, took 11th place this year, owing to the weak yen. It had come in third and seventh in 2013 and last year, respectively.


This year's top is Luanda, the capital city of Angola, as last year. It was followed by Hong Kong, Zurich, Singapore, Geneva, Shanghai, Beijing, Seoul, and Bern. Moscow slid from ninth to 50th due to the depreciation of the ruble. New York took 16th place in 2014, and this year



A model poses on a street in Gangnam, the southern area in Seoul.

LA jumped from 62nd to 36th. London remained in 12th place.

"The foreign exchange rate factor had a particularly significant effect on this year's list," the consulting firm explained. Mercer calculates the living expenses

based on 200 items and services including hamburgers and movie tickets, and the fluctuations of the U.S. dollar have an important effect on the calculation, because New York is the reference city. 

by Jung Suk-ye

Premium Price

IKEA Products More Expensive in Korea

The average price of 126 sofas and storage closets available at IKEA's official website in Korea is 522,717 won (US\$473), 14.8 percent to 19.5 percent higher than those of the same products available on its websites in the United States, Germany, and Japan. The average price is 455,344 won (US\$412) in the United States, 453,737 won (US\$410) in Germany, and 437,578 won (US\$396) in Japan. The comparison is based on the foreign exchange rate of June 15.


In Korea, no less than 100 out of the 126 products are available at prices higher than those in other countries. For example, the Soderhamn Corner Section Isefall Light Turquoise sofa 99 cm in width, 99 cm in depth, and 63 cm in seat width is sold for 470,000 won (US\$425) in Korea,



SEOUL, SOUTH KOREA
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while the price is 223,460 won (US\$202) in the U.S., 376,620 won (US\$341) in Germany, and 407,048 won (US\$368) in Japan.

IKEA explained that the difference in price is because it considers every country as an independent market. The furniture

company added that the prices of its products are determined based on countries' lifestyles, its market analysis results, areas of production, distribution channels, currency factors, tariffs, VATs, supply quantity, the numbers of stores, and other factors. 

by Jung Min-hee